

Sumter Stormwater Solutions



Year 2

2009-2010

Annual Report of Activities

November 2010



Don't let a good drop go bad...



Executive Summary



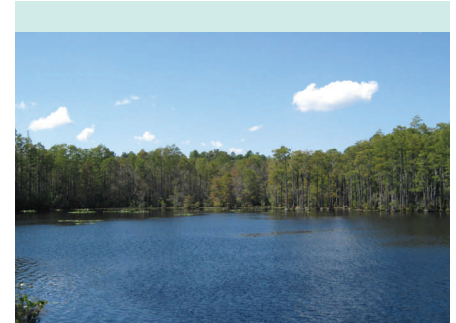
Sumter Stormwater Solutions was created in November 2008 and completed its first reporting year in September of 2009. For the second year of activities, Solutions members looked to past programs, evaluation tools, and other Carolina Clear partners for inspiration and guidance in planning programs. While continuing to promote general awareness, education and outreach initiatives in 2009-2010 sought to emphasize specific pollutants and strengthen public involvement and participation in water quality projects.

The members also sought to build cohesiveness and strength as an organization. In April of 2010, Solutions members adopted a logo to represent the group. This was an important step for the organization as it builds recognition of the group and its goals. Also, the logo serves to unify the different communities and partners of Sumter Stormwater Solutions under a single logo that represents everyone.

Another large development this year was the creation of a stormwater utility to fund the growing needs of Sumter County's stormwater program. Solutions was involved in educating both the council members and the public citizens on stormwater management so that they could make informed decisions related to this issue. In the next year, the county will begin developing and implementing such improvements as preventative maintenance programs, increased monitoring and enforcement, and restructuring of the stormwater department. Education will continue to play an essential role in helping the public understand this aspect of its local government.

In the summer and fall of 2009, a telephone survey of area residents was conducted to assess attitudes and behaviors of Sumter County residents that may affect water quality. This data was used in the development of the 2009-2010 education plan of work as well as in planning for 2010-2011. By continuously evaluating programs and the public's awareness and behaviors, Solutions can better understand the impact its efforts are having on residents.

2009-2010 was an exciting year with a great diversity of programs, wide reaching impacts, and meaningful steps forward for all partners. Looking back on the year, all members can be proud of their achievements and can anticipate an even brighter year 3!



Traditionally, natural resource management issues, such as stormwater and tree protection, have been limited to site level approaches. However, the impact of any given development affects our community on a larger scale. The "watershed approach" to planning stormwater management, non-point source pollution abatement and other environmental issues can be more economical than working in a "piece meal" fashion. A watershed approach takes into consideration all the problems and solutions in a watershed, all land use categories and soil types, landowners' objectives, and the downstream user needs.

***- From the
Sumter County 2030
Comprehensive Plan,
December 2009***

Executive Summary

2009-2010 Annual Report
Sumter Stormwater Solutions



Sumter Stormwater Solutions 2009-2010 Annual Report

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Sumter MS4's

Sumter Stormwater Solutions includes Sumter County and the City of Sumter. During Year 2, both municipal partners strengthened all aspects of their stormwater programs, including outreach, education, and public involvement.

Table 1. Summary of Local Consortium Representatives

Co-permittees	Consortium Representatives
City of Sumter	Teige Elliot Bill Rozier Al Harris
Sumter County	Peter Wilson Eddie Newman Karen Hyatt Gary Mixon



Education Partners

Sumter Stormwater Solutions education partners include government agencies, non-profit and community organizations, and businesses who share the consortium's mission of providing education to the public on stormwater issues throughout the county. In Year 2, the consortium focused on building new partnerships and strengthening existing ones. Central Carolina Technical College joined the consortium as a partner, and the City-County Planning Department and Soil and water Conservation District both expanded their roles by offering new types of programs. Each partner brings a unique skill sets to the organization and enhances the variety of programs the consortium is able to offer.

Table 2. Summary of Local Education Partners

Organization	Representative
Sumter City-County Planning Dept.	Susannah Smith, Claudia Rainey, Charley Holmes
SCDHEC BOW	Rebecca Spratlin, Amanda Ley
Sumter Soil & Water Conservation District	Pearce Atkins, Kimberly Arrington, TJ Yarber
BP Barber and Associates	Geoff Smith
Sumter County Master Gardeners	Amanda McNulty
Santee Riverkeeper	Mark Bruce
Central Carolina Technical College	Joshua Castleberry
CCTC Natural Resources Management Club	Joshua Castleberry
SC Department of Natural Resources	Marc Cribb





Goal and Objectives

Goal Statement

To enhance water resource protection and stewardship through education, public involvement, and partnerships.

Objectives

1. Use a watershed approach to develop and implement a comprehensive education strategy that addresses stormwater pollution using a prioritized approach capitalizing on local training resources.
2. Foster and expand upon citizen involvement in stormwater management through education and participation programs to encourage behavioral change towards improved environmental protection and awareness.
3. Facilitate collaboration among local organizations interested in watershed-related education to best meet the educational needs of local communities.
4. Through partnerships, leverage education resources and organize outreach programs to meet the NPDES Phase II permit requirements for public stormwater education and outreach to achieve greater water resource protection.
5. Participate in collaborative stormwater education that can serve as a model for others.

Sumter's river and stream corridors are the most predominant of the Green Infrastructure elements. These natural ecosystems support water quality, animal habitat, forest stands, riparian buffers, and biological diversity. River and Stream Corridors provide immense public benefit filtering stormwater run-off, staging flood waters, recharging groundwater, preserving habitat. These areas provide exceptional economic development, recreational, visual, scenic, and educational opportunities.

*- From the
Sumter County 2030
Comprehensive Plan,
December 2009*



Rain Garden at The Cove, Sumter

Goals and Objectives

2009-2010 Annual Report
Sumter Stormwater Solutions



Partner Focus - Planning

As with Year 1, the foundation of an effective year of stormwater education programs was a strong education plan of work. In developing the 2009-2010 education plan, Solutions members utilized the accomplishment data from the previous year to determine which programs were successful, and what new elements needed to be added to make education efforts as meaningful and comprehensive as possible. Information gathered in the Attitudes and Behaviors Telephone Survey (p. 5) was also used for guidance in planning activities.

In this second year, greater emphasis was placed on targeting specific pollutants rather than general awareness with guidance provided by SCDHEC's 303(d) list of impaired water bodies (2008). For example, because a major waterway through the city of Sumter is impaired for fecal bacteria, brochures targeting pet waste were designed and distributed to veterinarian offices where they were sure to reach pet owners. Specific audience types received special attention as well. Because of current policy issues related to stormwater, education of elected and appointed officials was emphasized. Professional audiences were also considered high priority because of ongoing issues with erosion and sediment control.

Many of the programs begun in Year 1 were repeated in Year 2, including rain barrel workshops, EnviroScape programs for schools and youth groups, and the Elementary Science for Early and Middle Childhood Classrooms course for teachers. Several new programs were also created including a hands-on best management practice training for professionals, a stormwater public forum series, Envirothon preparation for high school students, and a volunteer storm drain marking program.

Solutions members worked to make the most of existing opportunities. Presence at popular festivals was increased, such as the Sumter Iris Festival and County Fair. Mass media was better utilized through television public service announcements and frequent newspaper articles. Two cleanups centering around the statewide Beach Sweep/River Sweep program took place, one with adults and one with high school students.

This combination of new and existing programs worked well together for successful implementation in 2009-2010. By making messages and activities more specific, more targeted, and broader reaching, the potential for impact was much greater than in the first year of programming.

Appendix A shows the Year 2 Education Plan with complete accomplishment data. The drafted Year 3 Education Plan is also included.



Shot Pouch Creek



Second Mill Pond

Partner Focus



Evaluation - Telephone Survey

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Carolina Clear	Environmental Attitudes, Knowledge, & Behaviors Survey	July-Aug. 2009, Richland, Lexington, & Sumter Counties	403	Clemson Dept. of Sociology & Anthropology

Evaluation is a key component of any public outreach and education program, in order to determine if efforts are having the desired effect of changing behaviors. In order to better understand the attitudes, knowledge, and behaviors of South Carolina residents when it comes to water quality, Carolina Clear undertook a telephone survey project of residents in areas with active stormwater consortiums. Working with the Department of Sociology and Anthropology, a series of survey questions were developed which include environmental concern, knowledge about environmental concepts and practices and the causes and impacts of pollution, participation in recreational activities, participation in environmentally positive and negative behaviors, willingness to get involved in efforts to improve water quality, and familiarity with environmental organizations, such as Carolina Clear.

Richland, Lexington, and Sumter Counties were combined to make a midlands survey group. Clemson students made just over 28,000 phone calls in order to obtain the 400 completed surveys needed to have statistically significant data. Some of the more interesting results were:

- 44.5% of people surveyed are “very concerned” about pollution and environmental quality of local streams and waterways.
- 74.1% did not believe stormwater to be treated before discharge to local water bodies.
- 33.1% knew the correct definition of a watershed.
- 80% of residents said they would be “very likely to get involved if the were directly impacted by water quality.
- 47.4% said they would be “very likely” to get involved if they new local government could save money by taking actions to improve water quality.
- 38.7% said they would be “very likely” to get involved if media ran stories on positive actions taken by local residents to improve water quality.

This data will serve as a guide for developing our education programs over the next 5 years. In addition, it will serve as a baseline for comparison in the future. A repeat of the survey is planned for every 5 years, to assess whether progress is being made in changing behaviors that affect water quality.

Behavior Reported	%
Disposed of oil, paint or other chemicals down storm drains	1%
Dumped grass clippings down storm drain or backyard creek	2%
Operated a vehicle with a known leak.	18%
“Never” cleaned up after their pets when taking them for a walk	30%
“Never” considered the likelihood of a rainstorm before treating their lawn with fertilizer or pesticides	42%
“Never” washed their car on the lawn or gravel instead of pavement	51%

The executive summary report is included as Appendix B. The complete report is available on the Carolina Clear website at <http://www.clemson.edu/public/carolinaclear/surveys.html>.

Evaluation

General Public - Television

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Carolina Clear	Stormwater Awareness Public Service Announcement on Time Warner Cable	Midlands, August through December 2009	< 185,111 (number of subscribers in Sumter, Richland, and Lexington Counties)	N/A
Carolina Clear	“Palmetto People” Interview on Time Warner Cable	Midlands, August through December 2009	< 185,111 (number of subscribers in Sumter, Richland, and Lexington Counties)	N/A
Carolina Clear	Interview on “Making it Grow!” on SCETV	Midlands, August 3, 2010	3931 viewers	SCETV

From August to December, Time Warner Cable aired the Carolina Clear “Goldfish” water quality awareness public service announcement to audiences statewide. In addition, Carolina Clear statewide coordinator Katie Giacalone gave an interview on *Palmetto People* about stormwater education efforts and pollution issues in South Carolina. The 30-second commercial for television has the following educational message: there is a limited amount of clean, fresh water and actions that people take on a daily basis can affect the quality of that water supply. The PSA specifically identifies pollutant sources from over-fertilizing lawns, hazardous household materials, oils washing off driveways and parking lots, and pet waste—and the need to manage these potential pollutants. The commercial encourages the viewer to remember that “we all live downstream.”

The screenshot shows the Clemson University website with the following elements:

- Header: Clemson University, Text, A-Z Index, Calendar, Map, Phonebook, search...
- Logo: CLEMSON PUBLIC SERVICE ACTIVITIES
- Breadcrumb: CU > Public Service > Carolina Clear > Mass Media > Mass Media Outreach
- Section: Mass Media
- Text: **Stormwater on the road, on the radio, and on TV!** Several regional consortiums have launched their mass media outreach campaigns to educate residents and local travelers!
- Section: **Lexington and Richland Countywide Stormwater Consortiums**
- Video Player: A video player showing a waterfall scene with a progress bar at 0:01 / 0:32 and 360p resolution.
- Download buttons: Download ADOBE READER, Download ADOBE FLASHPLAYER
- Sidebar: Home & Garden Information, Agricultural Services, Extension, Experiment Station, Livestock-Poultry Health, Regulatory Services, Centers & Institutes, College of AFLS, Clemson University.

Katie Giacalone also appeared on the “Making it Grow!” program on SCETV, discussing rain barrels, rain gardens and ways to mitigate stormwater on the home landscape. Following her interview, the viewer online chat room was flooded with calls from people wanting rain barrels for their homes. “Making it Grow!” frequently includes gardening topics relating to stormwater, such as safe pesticide use, appropriate use of fertilizer, mulching, and watering efficiently.



For more information and to play the commercial, please go online at www.clemson.edu/public/carolinaclear and click on “Mass Media.”

General Public - Internet

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Carolina Clear	Sumter Stormwater Solutions website.	Ongoing	798	N/A

The Sumter Stormwater Solutions website has increased from 232 visits in the first year to 798 views in Year 2. Two new pages were added, one documenting impaired waterways in the county, as defined by the Department of Health and Environmental Control, and the other on stormwater related volunteer opportunities for Sumter residents.

The Solutions website is part of a larger Carolina Clear statewide website. Statewide resources are one of the advantages that come from being a under the Clemson Extension program. Several important tools were added to the statewide site during the past year. First, Carolina Clear added a South Carolina Low Impact Development Atlas, part of NEMO's national database. Anyone throughout the state can add an LID site to the database, such as a rain garden, pervious pavement, or cistern project. Similarly, the South Carolina Watershed Stewardship mapping tool allows users to list their volunteer organizations on a database map.

Check us out on the web at www.clemson.edu/carolinaclear/scsc/!

Several exciting additions are planned for the Sumter website in the upcoming year. Carolina Clear has recently created a Facebook page, and a Sumter Stormwater Solutions Facebook page may be coming soon. Also, in order to help the county and city inform citizens of illegal discharge laws, an Illicit Discharge Detection and Elimination website will be created, containing information about specific common IDDE pollutants, such as residential and charity car washing, oil and fluids from auto repair shops, and household hazardous wastes. The site will also have links to local ordinance language and resources for proper disposal of wastes.

General Public

General Public - Publications

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter County Extension Service	Multiple water quality related articles written for the <i>Sumter Item</i>	12 articles published throughout the year in Sumter County and the City of Sumter	Circulation of 33,000 for each article	N/A
Sumter County Extension Service	Water quality related articles written for the State Newspaper	July 22, 2010, circulation throughout the greater Columbia area, including Sumter	Circulation of 96,737	N/A
Sumter Soil & Water Conservation District	Stormwater-related articles in the Conservation District's Quarterly Newsletter, <i>Conservation-At-A-Glance</i>	Distributed electronically	Circulation of 850 for each quarter	N/A
Sumter Soil & Water Conservation District	The Conservation District's 2009 Annual Report included several articles on Stormwater	Distributed electronically January 2010	Circulation of 2,000	N/A



Clemson Extension agent Amanda McNulty writes gardening columns for the *Sumter Item* and *The State* newspapers. She also is co-host of *Making It Grow!* and coordinates the Master Gardener Program in Sumter County. Her articles on gardening frequently focus on water quality and environmentally conscious gardening, and are a huge asset for stormwater education in Sumter County.

<u>Title</u>	<u>Date</u>	<u>Publication</u>	<u>Topic/Pollutant</u>
"Shaw Squadrons Find Money in the Woods"	March, 2010	<i>The Item</i>	Litter
"It's time to treat lawns, gardens "	March 21, 2010	<i>The Item</i>	Fertilizer & pesticides
"Buy a Magazine"	March 30, 2010	<i>The Item</i>	Herbicides
"Polite Ways to Litter"	April 13, 2010	<i>The Item</i>	Litter
"Who Needs Mud?"	May 18, 2010	<i>The Item</i>	Rain Barrels
"Try some new tricks"	May 30, 2010	<i>The Item</i>	Pet waste, nutrients, oil, rain gardens
"Marine Debris"	June 20, 2010	<i>The Item</i>	Litter
"Measuring Water and Solving Puzzles"	July 22, 2010	<i>The State</i>	Correct watering
"Cool, cool water- Garden ponds can soothe the soul"	July 21, 2010	<i>The Item</i>	Water Gardens, Invasive Species
"Moon over Miami"	August, 2010	<i>The Item</i>	Litter
"Icon Destroyer"	August 17, 2010	<i>The Item</i>	Buffers, Nutrients
"Mosquito Dunks"	September, 2010	<i>The Item</i>	Pesticides
"It's time to prioritize your gardening list"	September 23, 2010	<i>The Item</i>	Mulching, pesticides

General Public

General Public - Festivals

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter Conservation District	Display at Sustainable Sumter Earth Day Celebration	Swan Lake Iris Gardens, April 25, 2010	250	City of Sumter
Carolina Clear, Master Gardeners	Displays at Sumter Iris Festival	Swan Lake Iris Garden, May 2-30, 2010	30,000	City of Sumter
Sumter County, Carolina Clear	Displays at the Sumter County Fair	Fair Grounds, Sept. 29 - Oct. 3 2010	30,000	Sumter Master Gardeners, Sumter Conservation District

Fairs and festivals are a great way to bring water quality messages to large numbers of people with the right tools to catch people’s attention. Carolina Clear developed a series of post card handouts on topics including general stormwater awareness, rain barrels, rain gardens, pet waste, septic tanks, and litter. The EnviroScape Watershed model is another great tool, keeping kids busy learning while parents can ask questions and discuss their concerns.

Right: Sumter County’s travelling rain barrel and rain garden display is colorful and eye-catching, and circulates real water!

Bottom left: At Sumter’s Earth Day Celebration, education partners shared information on recycling, watersheds, rain barrels, and rain gardens.

Bottom Right: At the Sumter Iris Festival, kids have fun painting “pollution” onto a model watershed, then washing it away with “rainstorms” from a squirt bottle.



General Public



General Public - Involvement

Lead Provider	Activity	Delivered	Number of Participants	Other Providers Involved
Sumter County	Manchester State Forest Community Cleanup	March 27, 2010, Manchester State Forest	54 volunteers	Shaw Air Force Base
City of Sumter	Westside Neighborhood Cleanup	May 1, 2010, Westside Neighborhood	20 volunteers	Westside Neighborhood
Carolina Clear	River Sweep: Shot Pouch Creek Community Cleanup	Sept. 18 2010, Shot Pouch Creek	16 volunteers	CCTC NRM Club
CCTC Natural Resources Management Club	Storm drain marking program	Central Carolina Tech Campus, Sept. 18, 2010	9 volunteers, 25 markers	Carolina Clear, Sumter County, City of Sumter

Sumter residents made an impact on local waterways through community cleanups of neighborhoods, wetlands, and streams. Throughout the year, 70 volunteers removed over 112,080 pounds of trash including over 400 tires and one ton of electronics. The Shot Pouch Creek cleanup on September 18 was part of the statewide Beach Sweep/River Sweep initiative organized by the S.C. Sea Grant Consortium and the S.C. Department of Natural Resources.



Sumter City and County also began a volunteer storm drain marking program. Rather than using traditional stencils that can quickly fade, Solutions members designed an eye-catching permanent plastic marker. These markers attach to the curb with adhesive, are long-lasting, and are easy to install. Volunteers from Central Carolina Technical College's Natural Resources Management Club installed 25 markers around campus, and city and county staff have also installed markers in a few neighborhoods. This will be an ongoing program, and efforts are currently underway to recruit volunteers from local homeowner associations, school clubs, and scout troops.



General Public



Youth & Teachers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter Conservation District	EnviroScope presentations for Cherryvale Elementary School Project Earth Club	Cherryvale Elementary School, February 16, 2010	40	Cherryvale Project Earth Club
Sumter Conservation District	EnviroScope presentations at Cherryvale Earth Day Celebration	Cherryvale Elementary School, April 22, 2010	250	Carolina Clear

Cherryvale Elementary Project Earth Club 1st-5th grade students learn about sources of water pollution in their communities with the EnviroScope watershed model. The model was also used at Cherryvale’s Earth Day festival, where students rotated from station to station learning about environmental topics.



Carolina Clear, Sumter Conservation	“Elementary Science for Early and Middle Childhood Classrooms” graduate course for teachers	Pocalla Springs Elementary, June 14-21, 2010	24	Sumter School Districts 2 & 17, SCDNR
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At this free two-week course, teachers from Sumter School Districts 2 and 17 learned exciting ways to bring hands-on activities into their science lessons. This year’s course included a field trip to the barrier islands. On board the Department of Natural Resources Vessel, *Discovery*, DNR staff caught ocean creatures and taught the teachers about their ecology.

(Photos courtesy of Beth)

This class gives us teachers not only new data, ideas, and resources, but refreshes us as learners.

- Jaime



Youth & Teachers



Youth & Teachers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter Conservation District	Envirothon Training for high school students: Aquatics and Ground Water Protection.	January 25 and March 8, 2010, Natural Resource Management Center	30	Carolina Clear
SC Department of Natural Resources	South Carolina Envirothon Competition	Clemson Sandhills REC, Columbia, SC, May 7, 2010	2 teams, 10 students	Sumter Conservation District
Carolina Clear	Training for Future Farmers of America Students on water quality testing	September 16, 2010, Lakewood High School	5	Lakewood High FFA



The South Carolina Envirothon competition is hosted by the SC Department of Natural Resources. The competition tests students' knowledge of environmental topics, emphasizing integrative thinking and problem solving. The winning team from the state competition competes on the national level. For the 2010 event, the Sumter Soil and Water Conservation District created a training program for Sumter teams. Guest experts prepared the students for each of the following subject areas: aquatics, forestry, soils, wildlife, current events, and oral presentations. The current topic was "ground water protection," so emphasis on water quality was given in all the subject areas. *Top left: Students practice watershed delineation for the Envirothon.*

The Sumter Conservation District sponsored teams from Lakewood High School Future Farmers of America (*bottom left*) and Crestwood High School (*bottom right*). Both teams did very well. The Lakewood High team placed highest among the FFA teams in the state, and went on to represent South Carolina at the National FFA Environmental and Natural Resource Career Development Event. This event included water quality analysis, and Carolina Clear trained the team in testing water samples for pH and dissolved oxygen.



Youth & Teachers



Youth & Teachers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter Conservation District	Coastal Carolina Adventure	Oct. 9-11, 2009, Pinopolis, SC	9	Berkley Soil and Water Conservation District
Sumter Conservation District	South Carolina Institute for Natural Resource Conservation	June 8-12, 2010, Greenwood, SC	2	Lander University, SCDNR
Carolina Clear	Presentation on Water Quality Careers for Central Carolina Tech Students	March 9 2010, Natural Resources Management Center	8	Central Carolina Technical College
Carolina Clear, Sumter High School	Sumter High School Environmental Center Cleanup	Sept. 16, 2010, Sumter High School	132	N/A



In Fall 2009, the Sumter Soil and Water Conservation District sponsored nine students to attend the Coastal Carolina Adventure Program, hosted by the Berkley Conservation District. Activities included canoeing through a swamp, exploring a salt marsh, listening to Gullah storytelling around a beach bonfire, touring a water/sewer treatment plant, and enjoying a boat cruise around the Charleston Harbor from a research vessel while trawling for marine life below. By the end of the weekend, the students left with a greater understanding and appreciation of our water supplies.

Left: Sumter students discover a Coastal Carolina Adventure



The Conservation District also sponsored two students to represent Sumter County at the South Carolina Institute for Natural Resource Conservation, a weeklong summer experience for 11th and 12th grade students at Lander University and supported by the SC Department of Natural Resources.

Adults aren't the only ones cleaning up Sumter. As part of World Wide Monitoring Day activities, Sumter High School biology students picked up trash from the wetlands of the Sumter High Environmental center and surrounding school grounds.



Youth & Teachers



Elected & Appointed Officials

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter County, City of Sumter	Leadership Sumter community development program, Environmental Day	April 14, 2010, Sumter County Public Works	18	Carolina Clear, DOT, others
Sumter County	Presentations to Sumter County Council on proposed stormwater utility.	June 8, June 15, August 24, & September 24, 2010, Sumter County Council Chambers	80 (20 per session)	BP Barber
Sumter County	Presentations for County Council on Proposed Stormwater Utility: Public Hearing	June 22, 2010, Sumter County Council Chambers	30	BP Barber

Early in 2009 Sumter County began discussing the possibility of creating stormwater utility fee to fund the growing needs of their stormwater program. The fees collected from this utility would be used to aid the County in meeting SCDHEC’s requirements to improve water quality. This would include monitoring, preventative maintenance, infrastructure improvements, increased enforcement, additional staff, and other measures.

Both the County Council and the general public needed a great deal of guidance on this issue. The stormwater utility ordinance went up for first reading on June 8. County staff, with the assistance of BP Barber, made five presentations to the council, including one formatted as a public hearing. The county also held a public information session (p. 18) to allow residents to voice their opinions and have their concerns addressed. The utility ordinance was passed on September 14, 2010.

In addition to programs for current leaders, Solutions participated in the Leadership Sumter Program for future leaders. Leadership Sumter is a program for building community leadership skills for leaders from many different types of businesses throughout Sumter. The environmental portion of this program included presentations on stormwater, recycling, littering, landfills, and tours of local facilities including oil recycling at public works, and the water treatment plant. The goal was for future decision makers to have a well-rounded understanding of the many functions of government within public works that often go unnoticed.



Elected & Appointed Officials

Professionals - Contractors & Engineers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter Conservation District, Sumter County Public Works	Stormwater Basics Workshop	Dec. 1, 2009, Sumter County Public Works	66	N/A
Sumter Conservation District	Presentation at Utility Coordinating Meeting	Dec. 10, 2009, Econo Lodge, Sumter	7	N/A
Sumter City-County Planning, Low Country Pavers	Pervious Pavers Seminar	Dec. 15, 2009, Sumter City/County Planning Office	9	Sumter Conservation District
Sumter City/County Planning	Public Forum - Water Quality: Best Management Practices	Aug. 9 & Sept. 7, 2010, Swan Lake visitor center	25	Carolina Clear, Sumter County, City of Sumter, Conservation District

The Sumter Soil and Water Conservation District held a stormwater basics workshop to educate construction professionals about stormwater controls. This free workshop was hosted by Sumter County Public Works. Participants learned basic principles of stormwater management, including proper use and installation of silt fencing, erosion control mats, inlet protection devices, and other BMP's. They also learned about erosion control by establishing grass, and the most effective way to accomplish that, as well as new laws regulating turbidity from construction. The workshop included classroom sessions and hands-on demonstrations.

Sumter City-County Planning hosted a technical seminar on pervious pavers. Pervious pavers function like ordinary concrete or asphalt, but allow water to infiltrate through the material, and offer water storage below the surface of a street or parking lot.

To give engineers a more general background on stormwater, the planning office also held a forum on water quality, which focused on the impact of urbanization on the floodplain, techniques for minimizing impact, such as erosion control and spill prevention and management at construction sites. The forum also covered local stormwater pollution regulations, including the MS4, illicit discharge, and the proposed stormwater utility.



Professionals: Contractors & Engineers



Homeowners

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter Extension Service	Master Gardener Training	January, 2010	20	Sumter Master Gardeners
Carolina Clear	Presentation on Rain Barrels and Rain Gardens for Master Gardener Training Class	April 12, 2010, Sumter North Hope Center	19	Sumter Master Gardeners
Carolina Clear	Build a Rain Barrel Workshops for Homeowners and Master Gardeners	April 12 & May 21, 2010 Sumter County Public Works	20	Sumter County, Sumter County Extension Service



The Clemson Master Gardener program begins as an in-depth training course on plants, pests, landscaping, and gardening, with an emphasis on using research-based principles to minimize environmental impact and work with nature, not against it. The course includes information on managing stormwater, responsible fertilizer and pesticide use, right plant-right place, efficient watering, and other water quality related topics. After training, master gardeners serve as volunteers in their communities, sharing their specialized knowledge with others. Volunteer activities include answering plant problem questions at the Extension office, staffing informational booths at festivals and more.



Sumter homeowners built 20 rain barrels at two workshops during Spring 2010. These 55-gallon barrels capture rooftop runoff and reduce stormwater runoff volume, which in turn decreases the capacity and volume of runoff to pick up pollutants. The water can later be used during dry times and replenishes the ground water table. Nearly all of Sumter's drinking water comes from groundwater. And, residents love rain barrels because they save them money!



Homeowners



Homeowners

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Sumter City/ County Planning	Public Forum: Water Quality - Part 1: Floodplain Regulations - The Where, Why, and How	June 21, 2010, Swan Lake Visitor Center	34	Carolina Clear
Sumter County	Public meeting on the proposed stormwater utility for Sumter County	June 2, 2010, North Hope Center	4	BP Barber, Carolina Clear
Carolina Clear	Pet Waste brochures distributed to local veterinarian offices	Sept. 2010, Sumter City and County	75 brochures	N/A

Fecal bacteria is a serious concern throughout the state of South Carolina. Two SCDHEC monitoring stations along Turkey Creek in Sumter are listed as impaired for fecal coliform bacterial. Picking up pet waste is one strategy to reduce bacteria. To encourage pet owners to pick up after their animals, Carolina Clear developed a brochure which was handed out at events and distributed it to veterinary offices in Sumter.

Much of the Sumter lies within the flood plain. To help homeowners better understand the many concepts related to water quality in Sumter, the planning office put together a series of public water quality forums, the first of which was on the subject of floodplain regulations. Participants learned what it means to live in a floodplain, how this affects development and water management on their properties, and the role of stormwater pollution in flood plains.



Early in 2010, Sumter County Council began discussing the creation of a stormwater utility (see also p. 15). To address property owner concerns about the associated fee, the county held a public meeting to explain the purpose of the utility and answer questions.



Homeowners

Conclusions for Year 2 (09-10)

Lead Provider	Activity	Location and Date Delivered	Other Providers Involved
Carolina Clear	Sumter Stormwater Solutions Planning Meetings	6 business meetings, North Hope Center	All MS4's and Educational Partners
Carolina Clear	Define Solutions goals and objectives	October 2009	All Solutions members
Carolina Clear	Drafted Year 2 Education Plan of Work	November 2009	All Solutions members
Carolina Clear	Designed Solutions logo	April 2010	All Solutions members



Build a Rain Barrel Workshop



Construction professionals at stormwater BMP workshop

2009-2010 was a very successful year for Sumter Stormwater Solutions. The diversity of programs continues to grow, allowing activities to target more pollutants and reach more audience groups. Looking towards the future, Solutions will use this year as a model for future years of public education, outreach, and community involvement.

Using the data gathered with the regional telephone survey, the consortium has identified behaviors and attitudes that can be improved through education efforts. The survey showed that Sumter County residents care about water quality and with the right motivation, were willing to get involved in protecting water resources. The consortium's challenge is to help the public understand that water pollution does impact them directly whether or not they notice it. However, citizens admitted to many behaviors that can lead to pollution. Picking up pet waste and avoiding applying fertilizer before a rain storm are two easily targeted behaviors that need improvement, according to the survey. The survey also provided Solutions with a baseline for future comparisons. Evaluation is essential to improving education and outreach efforts, and in the next year the partners will look to use programs that are measurable in their ability to increase awareness and affect behaviors.

In the upcoming year, Solutions will renew its focus on businesses. Because the city and county expect to increase illicit discharge enforcement and because businesses are an important audience affecting stormwater runoff, it is imperative for businesses to be educated on the potential pollution issues related to their operations. Programs will include a website and direct mailings to high-risk businesses, such as auto-repair shops and landscaping companies. Professional audiences are also important targets for the upcoming year. Not only does Solutions want to emphasize correct use of erosion control and stormwater management at construction sites, but also increased utilization of low impact development practices in new subdivisions and commercial developments.

Conclusions



Conclusions for Year 2 (09-10)

Over the next year solutions will continue to grow its existing programs. The storm drain marking program begun in 2010 will be expanded to draw volunteers from homeowners associations, scout troops, local church groups, and school environmental clubs. In time, the goal is to mark all storm drains on county and city maintained roads in the urbanized area of Sumter County. More school programs will be offered as well, to reach a greater number of Sumter youth.

Several exciting new initiatives are already in planning for 2011. Solutions members plan to produce a series of stormwater web videos, which will begin with a general introduction then branch into specialized topics including watersheds, flooding, pollutants, and best management practices. A new rain garden demonstration project is planned for Patriot Park, and a pond management clinic will be offered. A second television public service announcement is in the final phase of development, and Sumter will be receiving billboards to go along with the commercial's message.

Solutions will continue to seek out new partnerships and opportunities for collaboration with ongoing programs. The partnership with Central Carolina Technical College established in 2010 is very promising, both for drawing in a volunteer base of technically-minded students and for utilizing the knowledge and inspiration of the environmental department faculty. Central Carolina professor Joshua Castleberry developed the idea for the new web video series, and will provide the camera equipment and editing software. Relationships with elementary, middle and high schools cannot be underestimated either for providing access to youth audiences.

Sumter's water resources are precious and vital to the community, the economy, and the environment of the city and county. Sumter Stormwater Solutions efforts going into the future will continue to be guided by experience, careful planning, and commitment to protecting water quality. With dedication to stormwater education by all partners like was demonstrated over the past year, Sumter Stormwater Solutions can look forward to a great 2010-2011!



*Rain garden at a home in
The Cove subdivision*



Constructed wetland at Patriot Park



*Rain garden at Sumter County
Public Works*

Conclusions

Appendix A - Education Plan of Work

Each year, an Education Plan of Work is drafted to serve as an outline for initiatives over the upcoming year. Lessons learned in year 1 were applied in creating the year 2 plan, with successful programs being continued, and new programs being developed to meet additional programming needs. As a living document, the plan is constantly updated as programs are completed and new opportunities and ideas develop. Appendix A1 shows the Year 1 Education Plan updated to the end of the permit year, with delivery dates, participation data, and assessment information. Appendix A2 shows the new education plan developed for the 2009-2010 reporting year. The latest version of the Education plan is made available to the public for download at http://www.clemson.edu/public/carolinaclear/consortiums/sumter_home/about.html.

Table 3. Year 2 Education Plan of Work, Page 1

ADAPTIVE Stormwater Education Plan		Year 2 (2009-2010) - Sumter Stormwater Solutions										Living Document (last updated 10/20/2010)					
Lead Service Provider	Activity	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	Number Impacted/ Reached	Assessment Type	
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other						
General Public																	
Carolina Clear	TV Commercial on Time Warner Cable, and <i>Palmetto People</i> interview	Statewide	x												August - December 2009	<185,111 (Richland, Lexington, Sumter Cable subscribers)	
Carolina Clear	Appearance on <i>Making it Grow!</i> on rain barrels, rain gardens and ways to mitigate stormwater on the home landscape.	Statewide	x			x	x						SCETV	August 3, 2010	3931	Feedback via internet chat room.	
Carolina Clear	Sumter Stormwater Solutions Website	Statewide	x	x	x	x	x			x				Online, ongoing	798 page views		
Sumter Extension Service	Water Quality articles written for the <i>Sumter Item</i> newspaper	Sumter County	x	x	x	x	x	x	x					12 articles	396,000		
Sumter Extension Service	Water Quality article written for <i>The State</i> newspaper	Midlands	x											July 2010	96,737		
Soil & Water Conservation District	Stormwater-related newsletter articles	Sumter County	x		x	x						x		Distributed Quarterly	850		
Soil & Water Conservation District	Conservation District Annual Report	Sumter County	x	x	x	x								12/28/09 Electronic Distribution	2000		
Carolina Clear	Environmental Attitudes & Behaviors Survey & Report	Midlands	x	x	x	x	x	x	x				Clemson University	Completed January 2010	400	Survey	
Carolina Clear, Sumter County	Display at Sustainable Sumter Earth day Celebration	Sumter County	x	x	x	x	x			x			City of Sumter, Master Gardeners	4/24/2010 Swan Lake	250		
Sumter Master Gardeners, Carolina Clear	Displays at Sumter Iris Festival	Sumter County	x											May 27-30, 2010 Swan Lake	30000		
Sumter County Public Works	Displays at Sumter County Fair	Sumter County	x	x	x	x	x			x			Master Gardeners, Carolina Clear	9/1/2010, Fairgrounds	30,000		

Continued.....

Appendix A - Education Plan of Work



Appendix A - Education Plan of Work

Table 3. Year 2 Education Plan of Work, Page 2

Lead Service Provider	Activity	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	Number Impacted/ Reached	Assessment Type
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other					
General Public																
Carolina Clear	Storm Drain Marking Program	Sumter County	x										Sumter County & City of Sumter	September 2010, Sumter City and County	9 volunteers, 25 markers	Number of drains marked
Sumter County Public Works	Manchester State Forest Community Cleanup	Sumter County	x								x		Shaw Air Force Base	3/27/2010, Manchester State Forest	54 volunteers	Pounds of trash removed
City of Sumter	Westside Neighborhood Cleanup	City of Sumter	x		x						x		Westside Neighborhood	5/1/2010, Westside Neighborhood	20	Pounds of trash removed
Carolina Clear	River Sweep: Shot Pouch Creek Community Cleanup	Sumter County	x		x						x			9/18/2010, Shot Pouch Creek	16 volunteers	Pounds of trash removed
Sumter County	Public meeting on the proposed stormwater utility for Sumter County	Sumter County	x									Storm-water Utility	Carolina Clear	6/2/2010, North Hope Center	4	
Carolina Clear	Pet Waste brochures distributed to local veterinarian offices	Sumter County	x	x										September 2010, Sumter City and County	75 brochures	

Youth / K-12 / Higher Education Students / Teachers																
Soil & Water Conservation District	Enviroscape presentations for Cherrydale Elementary School Project Earth Club	Sumter County	x	x	x	x	x				x		Cherryvale Project Earth Club	2/16/2010 Cherryvale Elementary School	40	
Soil & Water Conservation District	Earth Day Fair at Cherrydale Elementary school	Sumter County	x	x	x	x	x				x		Carolina Clear	4/22/2010 Cherryvale ES	250	
Soil & Water Conservation District	Coastal Carolina Adventure	Statewide	x	x	x	x	x				x			Oct. 9-11, 2009, Pinopolis, SC	9 students sponsored	
Soil & Water Conservation District	South Carolina Institute for Natural Resource Conservation	Statewide	x	x	x	x	x				x		Lander University	6/2010, Lander University	2	
Soil & Water Conservation District	Envirothon Training for high school students - Aquatics and Ground Water Protection	Sumter County											Carolina Clear, DNR	1/25/2010, 3/8/2010 Natural Resource Management Center	30	Competition
SCDNR	South Carolina Envirothon	Statewide	x	x	x	x	x				x		Soil & Water Conservation District	5/7/2010, Columbia	2 teams, 10 students	Competition
Soil & Water Conservation District	"Elementary Science for Early & Middle Childhood Classrooms" graduate course for teachers	Sumter County	x	x	x	x	x				x	x	Carolina Clear	6/14/2010 - 6/21/2010, Pocalla Springs Elementary	24	Feedback
Carolina Clear, Sumter High School	Sumter High School Environmental Center Cleanup	Sumter County	x		x						x			9/16/2010, Sumter High School	132	Pounds of trash removed
Carolina Clear	Training for Future Farmers of America Students on water quality testing	Sumter County	x		x	x	x	x				x		9/16/2010, Lakewood High School	5	Competition
Carolina Clear	Presentation on Water Quality Careers for Central Carolina Tech Students	Sumter County	x										Central Carolina Technical College	3/9/2010, Natural Resources Management Center	8	

Continued.....

Appendix A - Education Plan of Work



Appendix A - Education Plan of Work

Table 3. Year 2 Education Plan of Work, Page 3

Lead Service Provider	Activity	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	Number Impacted/ Reached	Assessment Type
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other					
Elected and Appointed Officials and High-Level Staff																
Sumter County, City of Sumter	Leadership Sumter community development program, Environmental Day	Sumter County	x	x	x	x	x	x	x	x	x		Carolina Clear, DOT, others	4/14/2010, Sumter Co. Public Works	18	
Sumter County	Presentations for County Council on Stormwater Utility	Sumter County	x									Storm-water Utility	BP Barber	6/8/2010, 6/15/2010, 8/24/2010, 9/24/2010, Sumter County Council Chambers	80 (20 per session)	Passage of Stormwater Utility by County Council
Sumter County	Presentations for County Council on Proposed Stormwater Utility: Public Hearing	Sumter County	x									Storm-water Utility	BP Barber	6/22/2010, Sumter County Council Chambers	30	Passage of Stormwater Utility by County Council
Professionals: Contractors, Engineers, Developers, Landscape Architects																
Sumter Conservation District, Sumter County Public Works	Stormwater Basics Workshop	Sumter County	x			x								12/1/09 Sumter County Public Works	66	
Sumter Conservation District	Presentation at Utility Coordinating meeting	Sumter County	x									Storm-water Utility		12/10/09 Econolodge, Sumter, SC	7	
Sumter City-County Planning, Low Country Pavers	Pervious Pavers Seminar	Sumter County	x		x								Sutner Counservation District	12/15/09, Sumter City/County Planning Office	9	
Sumter City/County Planning	Public Forum: Water Quality - Part 2: <i>Best Management Practices</i>	Sumter County	x	x	x	x	x	x	x	x	x		Carolina Clear	8/9/2010 & 9/7/2010, Swan Lake	25	
Homeowners & Homeowner Associations																
Clemson Extension	Master Gardener Training Course	Sumter County	x		x	x	x				x		Sumter Master Gardeners	Sumter North Hope Center	20	Exam
Carolina Clear	Presentation on Rain Barrels and Rain Gardens for Master Gardener Training Class	Sumter County	x		x	x	x						Sumter Master Gardeners	04/12/10, Sumter North Hope Center	19	
Carolina Clear	Rain Barrel Workshops for Master Gardeners and Homeowners	Sumter County	x			x								4/12/10 & 5/21/10 Sumter Co. Public Works	20	Post-survey
Sumter City/County Planning	Public Forum: Water Quality - Part 1: <i>Floodplain Regulations</i>	Sumter County	x	x	x	x	x	x	x	x	x		Carolina Clear	6/21/10, Swan Lake	34	

Appendix A - Education Plan of Work



Appendix A - Education Plan of Work

Table 4. Year 3 Education Plan of Work (Draft), Page 1

ADAPTIVE Stormwater Education Plan		Year 3 (2010-2011) Sumter Stormwater Solutions										Living Document (last updated 11/10/2010)			
Lead Service Provider	Activity	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other				
General Public															
Carolina Clear	Television Commercial on Time Warner Cable	Statewide	x	x	x		x								
Carolina Clear	Radio Public Service Announcements	Sumter County	x	x	x		x				x				Fall 2010, Florence, Darlington, & Sumter Counties
Carolina Clear	Stormwater Billboards	Sumter County	x												
Sumter Extension Service	Water Quality articles written for the Sumter <i>Item</i> and <i>The State</i> newspapers	Sumter County	x		x	x	x								Ongoing
Soil & Water Conservation District	Stormwater-related newsletter articles	Sumter County	x		x	x					x				Quarterly
Soil & Water Conservation District	Conservation District Annual Report	Sumter County	x	x	x	x									January 2011
Carolina Clear	Sumter Stormwater Solutions Website	Statewide	x	x	x	x	x				x				Ongoing
Carolina Clear	Sumter Stormwater Solutions Facebook page	Statewide	x												
Carolina Clear	IDDE Website	Sumter County	x	x	x		x								Online, Winter 2011
Central Carolina Tech	Water Quality Video Series for Youtube & Gogreentube	Statewide	x	x	x	x	x	x	x	x				Carolina Clear, City-County Planning	
Carolina Clear, Sumter County, City of Sumter	Storm Drain Marking Program with accompanying door hanger	Sumter County	x	x	x	x	x				x	x		Volunteer groups	Ongoing
Carolina Clear	Pet Waste Brochures Distributed at Veterinarian offices, animal control, ASPCA, pet supply stores	Sumter County	x	x			x								Ongoing
Carolina Clear	Display at Sustainable Sumter Earth Day Celebration	Sumter County	x	x	x	x	x				x			City of Sumter	April 2011
Carolina Clear	Displays at Iris Festival	Sumter County	x											Sumter Master Gardeners	May 2011
Sumter County Public Works	Displays at Sumter County Fair	Sumter County	x	x	x	x	x				x			Carolina Clear	September 2011

Continued.....

Appendix A - Education Plan of Work



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Table 4. Year 3 Education Plan of Work (Draft), Page 2

Lead Service Provider	Activity	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other				
General Public															
City of Sumter, Sumter Extension Service	Sumter Neighborhood Clean-ups	City of Sumter	x		x							x			
Carolina Clear	Riversweep Stream Cleanup	Sumter County												Sumter County, City of Sumter	September 2011
Sumter City-County Planning	Water Quality Seminar Series for the General Public	Sumter County	x	x	x	x	x				x	x		Carolina Clear	
Carolina Clear	Promote Alternatives to Charity Carwashes	Sumter County	x		x		x								
Youth / K-12 / Teachers															
Soil & Water Conservation District	Coastal Carolina Adventure	Statewide	x	x	x	x	x				x				October 2010
Soil & Water Conservation District	Student training program for SC Envirothon	Sumter County												Carolina Clear, DNR	Winter 2011
SCDNR	South Carolina Envirothon	Statewide	x	x	x	x	x				x			Soil & Water Conservation District	May 2011
Soil & Water Conservation District	South Carolina Institute for Natural Resource Conservation	Statewide	x	x	x	x	x				x			Lander University	June 2011
Carolina Clear, Soil & Water Conservation District	Enviroscape Presentations for Schools and Youth Clubs	Sumter County	x	x	x	x	x	x	x	x	x	x			
Carolina Clear	Water Quality Programs for High Schools	Sumter County	x	x	x	x	x	x	x	x	x	x			
Soil & Water Conservation District	"Elementary Science for Early & Middle Childhood Classrooms" graduate course for teachers	Sumter County	x	x	x	x	x				x	x		Carolina Clear	June 2011
Elected and Appointed Officials and High-Level Staff															
Carolina Clear	Nemo (Non-point Education for Municipal Officials) presentations	Sumter County	x											SC Sea Grant, KMB	
Sumter County	Presentations for County Council on relevant stormwater-related topics	Sumter County	x											Carolina Clear	
Sumter County, City of Sumter	Leadership Sumter Environmental Day	Sumter County	x											Carolina Clear	

Continued.....

Appendix A - Education Plan of Work



Appendix A - Education Plan of Work

Table 4. Year 3 Education Plan of Work (Draft), Page 3

Lead Service Provider	Activity	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other				
Professionals: Contractors, Engineers, Developers, Landscape Architects															
Sumter Conservation District	Stormwater Basics Workshop	Sumter County	x			x									
Clemson Extension	Pond Management Workshop	Sumter County	x		x		x	x							11/11/10, Bethel UMC, Oswego
Sumter City-County Planning	Water Quality Seminar Series for Professionals	Sumter County	x		x								Carolina Clear		Ongoing, Swan Lake
Clemson	Certified Erosion Prevention and Sediment Control Inspector training	Sumter County	x			x									Ongoing
Carolina Clear, Sumter County	Stormwater BMP Workshops at Patriot Park	Sumter County	x		x	x							City-County Planning, City of Sumter		Spring 2011, Patriot Park
Sumter City-County Planning	Turkey Creek Work Session for Erosion Control and Watershed Projects	Sumter County	x			x							Many		10/18/2010, Sumter City Centre
Homeowners & Homeowner Associations															
Sumter Extension Service	Master Gardener Training	Sumter County	x		x	x	x						Sumter Master Gardeners		Spring 2011, North Hope Center
Sumter County	Rain Garden Installation and Workshop at Patriot Park	Sumter County	x	x	x	x	x			x	x		Carolina Clear, Clemson Extension		Spring 2011, Patriot Park
Carolina Clear	Rain Barrel Workshops	Sumter County	x			x									
Carolina Clear	Presentations to Home Owners Associations	Sumter County													
Commercial Citizens (Landscapers and Agriculture Sector)															
Carolina Clear	Presentation for Chamber of Commerce	Sumter County	x												
Carolina Clear	IDDE brochures mailed to high risk businesses (i.e. Auto Repair)	Sumter County	x												Winter 2011

Appendix A - Education Plan of Work



Appendix B - Telephone Survey

Environmental Attitudes, Knowledge, and Behaviors of Residents of the Midlands Region, S.C.

Dr. Catherine Mobley, Ph.D.
Dr. James Witte, Ph.D.
Dr. Roy Pargas, Ph.D.
Justin Green, Research Assistant

Clemson University

Executive Summary

In May 2009, Carolina Clear of the Clemson University Restoration Institute contracted with researchers from Clemson University's Department of Sociology and Anthropology (Dr. Catherine Mobley and Dr. James Witte) and the School of Computing (Dr. Roy Pargas) to conduct a telephone survey of residents of the Midlands region of South Carolina.

The population of the Midlands region is such that a sample of 385-400 respondents would permit estimates of the survey results with a margin of error of $\pm 5\%$ at a 95% confidence level. The survey was conducted from mid-July to early August 2009. Data were collected from 403 residents from the following 28 zip code areas in the Midlands region:

29016	29061	29150	29169	29201	29205	29210
29033	29063	29152	29170	29202	29206	29212
29040	29072	29153	29172	29203	29207	29223
29053	29073	29154	29177	29204	29209	29229

The main goal of the survey was to obtain information about residents' attitudes, knowledge, behaviors, and intentions as they relate to the environment. The results can serve as a baseline for measuring the success of future environmental and stormwater education efforts. The information collected about the various subgroups (and reported in the cross-tabulation analyses of the full report) can assist staff in targeting educational efforts by sociodemographic characteristics.

Appendix B - Telephone Survey

2009-2010 Annual Report
Sumter Stormwater Solutions



Appendix B - Telephone Survey

Brief Description of Sample

When compared to the general population as reflected in Census 2000 data, the Midlands region survey sample was disproportionately female (63.3% of the sample vs. 51.7% of the actual population in the 28 zip code areas, as reported by the U.S. Bureau of the Census) and better educated than the general population (with 52.4% of the sample earning a bachelor's degree or higher vs. 28.5% of the general population). With respect to race, 74.7% of the sample was white as compared to 61.0% of the general population. There were also some differences in the age profiles, with the survey comprised of a greater proportion of individuals 55 and older than found in the general population (46.3% vs. 24.0%, respectively) and a lower proportion of 18-24 year olds (5.3% of the phone survey vs. 15.8% of the general population). Approximately 88.5% of respondents indicated they were homeowners (as compared to 2/3 (66.0%) of the general population) and a minority of 41.2% of respondents indicated they lived next to a creek, stream, river, pond or other water body.

Research has shown that some of these segments of the population (e.g., higher-educated females) are more likely to participate in surveys. Thus, we adjusted for the demographic differences between the telephone sample and Census data by using standard statistical weighting procedures. The resulting weighted data are a closer approximation of Census population figures and are thus a better representation of the public's views on the issues covered in this survey. The results reported and discussed in this Executive Summary and the full report are based on the weighted data.

Main Findings

Survey results reveal a complex picture of the environmental views of Midlands residents. The summary below presents some of the main research findings.

- **Residents of the Midlands region are concerned about water quality in the region and place a high value on greenways.** Approximately 44.5% of respondents are “very concerned” and 37.6 % are “somewhat concerned” about pollution and the environmental quality of local streams and waterways. Nearly 81% of respondents indicated that greenways were valuable assets to the community.



Appendix B - Telephone Survey

- **Residents have a basic level of understanding about the various causes of poor water quality.** When asked about the impact of humans on the environment, 62.6% of respondents indicated that what people do on the land affects the quality of their local streams and waterways “a great deal.” Nearly 78% of respondents “strongly agreed” or “agreed” that inspection and pump out of septic tanks protects water quality; 13.0% indicated “do not know” for this question. Slightly more than 79% of respondents “strongly agreed” or “agreed” that pet waste is a source of bacteria pollution in local waterways (although nearly 10% indicated they did not know). Regarding beliefs about the treatment of stormwater, nearly 3/4 of respondents (74.1%) did not believe that stormwater was treated before reaching lakes, rivers and streams.

Respondents were also asked to rate the extent to which nine different activities impacted streams and lakes in the area. Respondents were most likely to say that the following sources of pollution had either a “great impact” or “some impact” on water quality: fertilizers and lawn chemicals (83.4%), fuel and oil leaks from trucks, buses or automobiles (82.9%), and industrial sites (81.1%). Of the items listed, respondents were most likely to indicate that the following sources of pollution had either “very little impact” or “no impact” on water quality: waste from birds (49.4%); run off from people washing their cars (43.0%) and pet waste (35.8%).

- **The high level of concern about water quality is generally matched by a fairly good level of knowledge among residents about the basics of watersheds.** When asked to choose the correct definition of the term “watershed,” nearly one-third (33.1%) of respondents selected the correct answer (“area that drains into specific river or lake”). However, slightly more than one-fourth (25.3%) of respondents indicated “do not know” when asked to choose the correct definition of the “term” watershed. A nearly equal proportion selected either “low area that retains water” (14.7%) or “reservoir that serves as a municipal water source (14.6%). When asked if they could name the local body of water that absorbs runoff after a rainstorm, a large proportion of respondents (43.6%) indicated they could not do so.
- **For the most part, Midlands residents are involved in water and environmental conservation efforts.** Slightly more than 72% of respondents of respondents indicated that, in the past two years, they had made an effort to reduce water usage out of concern for water quantity (i.e., drought) issues. However, a smaller proportion (40.8%) reduced water usage out of concern for water quality. In general, Midlands residents are somewhat active in citizen-based environmental efforts: nearly 26% of respondents indicated they had participated in a lake or river cleanup and 15% had joined or volunteered for a conservation organization in the past two years.

Appendix B - Telephone Survey



Appendix B - Telephone Survey

- **There are some indications that Midlands residents are engaging in environmentally-friendly household behaviors, although some residents are engaging in behaviors that could harm local rivers and streams.** Nearly all respondents (99.5%) indicated that, in the past two years, they “never” stored fertilizers and pesticides in leaking containers, disposed of oil, paint, or other chemicals down storm drains (98.8%) or dumped grass clippings down storm drains or backyard creeks (98.4%). Nearly 82% (81.7%) of respondents indicated they “never” operated a motor vehicle with a leak. However, a slight majority of respondents (50.7%) indicated that they “never” washed their car on the lawn or gravel instead of pavement, 42.2% of respondents indicated they “never” considered the likelihood of a rainstorm before treating their lawn with fertilizers or pesticides, and nearly 30% of respondents indicated they “never” cleaned up after their pets when taking them for a walk.
- **Midlands residents are not very active in outdoor recreational behaviors, especially as it concerns water-based recreational activities.** Hiking and fishing were the two most popular recreational activities for Midlands respondents (with 17.2% and 10.7% of respondents indicating they participated in these activities “often,” respectively). However, nearly 83% of respondents indicated they have “never” gone hunting or trapping, 78.2% indicated they “never” had kayaked or canoed, 60.5% had “never” gone motorboating, and 56.4% indicated they had “never” gone swimming in rivers or lakes. And, although fishing was the second most popular activity, still 44.8% of respondents indicated they had “never” fished.
- **The high level of concern about water quality is generally matched by a somewhat high level of willingness to get involved in water resource issues.** Nearly 80% of respondents indicated they would “very likely” become involved if they were directly impacted by water quality. However, for the other four items, the proportion of respondents indicating they would “very likely” get involved was substantially lower than if they were directly impacted: if they knew local government could save money by taking actions to improve water quality (47.4% said “very likely”), if the local media ran positive stories taken by local residents to improve water quality (38.7%), the local media ran stories on local water pollution problems (37.5%), and if they had more information about water quality issues in the area (30.3%).

Appendix B - Telephone Survey



Appendix B - Telephone Survey

- **Respondents use a variety of media for receiving local and regional information and news.** Respondents were asked to choose the three primary ways that they receive local and regional information and news. By far, the most popular source of information and news was television evening news broadcasts, with slightly more than 85% of respondents indicated that they received their news through this source. Slightly more than 55% indicated they listened to the morning news for local and regional information. Local newspapers were the third most important source of information for respondents: 47.6% of respondents indicated this as one of their three primary sources of news. Regional newspapers were one of the top three choices for 24.2% of respondents. Billboards and posters and events/workshops were the least frequently mentioned source of news: 5.7% and 3.0% indicated these sources as one of their three primary sources of news, respectively. In response to a separate question, nearly 69% of respondents indicated they used the Internet to get their local and regional news.
- **There is a low level of awareness among respondents about local organizations that seek to improve water quality.** Nearly 88% of respondents indicated they had never heard of Carolina Clear. However, 11.5% indicated they had heard of Carolina Clear, but were not aware of its programs; less than 1% indicated they were aware of both Carolina Clear and its programs. Respondents had a similar level of awareness of the Lexington County Stormwater Consortium: just over 90% of respondents indicated they had not heard of the consortium, while just over 8% indicated they had heard of the consortium, but were not familiar with its programs. A small proportion (1.4%) indicated they were aware of both the Consortium and its programs.
- **Respondents were somewhat aware of county ordinances that are in place to protect water quality.** Nearly 11% of respondents were “very familiar” and slightly more than 15% of respondents were “somewhat familiar” with their county’s ordinances that are designed to protect water quality. However, nearly 3/4 (73.7%) of those surveyed indicated they were not at all aware of these local regulations and ordinances.



Appendix C - Selected Newspaper Articles

Icon Destroyer

*Amanda McNulty, County Extension Agent
KEEPING SUMTER BEAUTIFUL
Published in the Sumter Item,
August 17, 2010*

It sounds like a summer movie, although nothing can match Liam Neeson's "Release the Krackens!" But my Aunt Liza was an icon destroyer, at least in her domain. When everyone else was buying prints of camellias, Liza opted to collect grim-faced etchings of George Washington. When she and her contemporaries had gotten children educated and had a little extra money, instead of a staid Lincoln she bought a used Cadillac convertible and ruined the complexions of numerous red-headed and blond nieces whom she ferried back and forth to our grandparent's summer home in Saluda, North Carolina.

But her most unusual and prescient move was to hide the suburban dream house she and Uncle Alex, along with countless other couples, raised in the depression and tempered by the separations and deaths of loved ones during WWII, built as a testament to a new way of living.

It was the beginning of our addiction to consumption and comfort, when I think back on it, with milkmen opening the backdoor during breakfast and putting the bottles directly into the refrigerator while the African-American cook fed the children before sending them off to school.

Like the buxom bride a cousin married, whose wedding dress raised the comment, "Why doesn't she just put them a silver platter and be done with it?" the houses in these neighborhoods were all about show. A few trees dotted the lawn and boxwoods and magnolias framed the house so anyone driving by could see that this family didn't have to plant so much a tomato, so successful was their separation from the hardworking lives of their parents.

Liza opted to line the front of her property with obscuring shrubbery. You had to really slow down and rubber neck to see past the beds of Clyeras and Indica azaleas the framed the yard. Her motivation was contrariness and, perhaps since her husband was an architect, she had an instinctive understanding of reveal-conceal. But what she didn't know was that she was an early water quality protector.

After each torrential storm this summer, the storm drain at our office is clogged with pine straw, branches, and litter; all the detritus that had collected on the expanses of mowed turf.

The scene is repeated on every street in Sumter. The lawns are washed clean with the rinse water draining into Shot Pouch Creek, Swan Lake, the Green Swamp and beyond. Organic matter, so valuable to plants, is lost from its home and becomes silt when washed into waterways. Grass clippings, filled with slow-release nitrogen which could feed the turf that produced them, instead release that nutrient in streams where it creates harmful algae blooms.

Consider raising your neckline. A border of shrubbery or ornamental grasses between your lawn and the street will not only create interest in what lies behind it, but will hold in place the organic matter your landscape generates, enriching your soil and nurturing your plants. Join Aunt Liza in smashing that icon of a house sitting like a postage stamp on an envelope of grass. Turn that turf into an environmentally green island, surrounded with protecting borders that will not only stop traffic but the unintentional movement of pollutants into our waterways.

Appendix C - Selected Newspaper Articles

2009-2010 Annual Report
Sumter Stormwater Solutions



Appendix C - Selected Newspaper Articles

Polite Ways to Litter, 101

*Amanda McNulty, County Extension Agent
Published in the Sumter Item,
April 13, 2010*

We had a grand cleanup at Manchester State Forest last Saturday with forty-nine able-bodied bodies who picked up over a hundred tires and filled two roll-offs with bottles, cans, and general debris. We met at 8:00 am when the thermometer was still low enough to keep everyone huddled inside his coat. I was getting a good bit of ribbing about having scheduled a visit from Jessie Voisin and his famous snow cones for the conclusion of our noon time picnic.

By twelve o'clock, when we gathered back at Headquarters for a delicious barbecued chicken dinner prepared by Steve Ward, the line for the snow cones was around the block. Four hours of bending over, reaching into vines and stickers to get a beer bottle, picking up dead dogs in plastic bags, and getting slapped in the face with branches had everyone pretty well whipped.

We were tired and hungry but had made friends and shared the camaraderie of restoring nature to her natural beauty, even if just for a little while.

The hardest part was walking through the woods from ten to twenty feet back from the roadside. Trashy people seem to think they should throw their empty Coors bottles as far into the briar patch as possible. Out of sight, out of mind must be their motto. Those individuals who arrive at the convenience centers after hours and can't be bothered to wait until the next day pick the densest thickets to pitch their plastic garbage bags into. I took two aspirin that morning hoping to stay limber and ended up nearly bleeding out after getting tangled up in that blanketty-blank smilax.

So I have come up with rules of etiquette for litterers.

Don't act like you're trying out for the P15's, slinging that glass bottle to kingdom come. On several occasions, we had to duck under so many vines to retrieve those containers that everyone looked at me, five feet, three inches, as the default retriever. A litterer who had a nice momma would just roll down the window and drop that bottle or can onto the sandy banks lining the road.

A litterer who had a nice momma would also gently place a garbage bag filled with scraps from supper, nasty baby diapers, and broken jars of jelly on the side of the road so the bag wouldn't break open and could easily be lifted up and discarded of properly by a person whose momma was a little bit nicer.

A litterer who had a nice momma would give his family pet a decent burial in the backyard rather than stuffing Fido into a plastic bag and leaving him on the side of the road to swell up and attract maggots. I guess Fido's owner was too distraught to put much of a heave ho into getting his little body out the trunk.

A litterer who had a nice momma would make a tire swing for his kids out of his used Firestones rather than tossing them over a barbed wire fence that tore my britches as I tried to haul them out of the rough.

You know, I hate to say it, but I'm afraid we have a shortage of nice mommas among our population of chronic litterers.

Appendix C - Selected Newspaper Articles