

Richland Countywide Stormwater Consortium



Year 2

FY 2009-2010

Annual Report of Activities



September 2010



Executive Summary

The Richland County Stormwater Consortium was formed in 2008, and completed its first reporting year in June of 2009. With the solid foundation established in Year 1, the consortium entered Year 2 with great ambitions. We began with a comprehensive Education Plan of Work (Appendix A), guided by the clear mission statement and goals developed by the consortium partners in June 2009. The group was committed to increasing both the quantity and the quality of our outreach, education, and public involvement initiatives.

In October of 2009, public awareness of the consortium's efforts took a big step forward with a Joint Proclamation Signing event, in which Richland County, the City of Forest Acres, and the Town of Arcadia Lakes formally came together to recognize the consortium and commit to protecting water quality in the county.

The consortium sought to increase the number of programs targeting specific pollutants and audiences building on the more general approach taken in year 1. Special attention was placed on pet waste in Year 2, and initiatives including brochures and signage were utilized to target this pollutant. Another focus for the year was to promote community involvement in water quality projects. Six rain gardens were completed within the year, and participation in clean-ups increased greatly. Perhaps the most notable achievement was the beginning of the Crane Creek Watershed Association. Stakeholders and concerned citizens came together to form the backbone of this new organization dedicated to protecting this high-priority watershed.

In the fall of 2009 a telephone survey of area residents was conducted to assess attitudes and behaviors of Richland County residents that may affect water quality. This data was used in the development of the education plan for Year 3 (Appendix C) and helped us evaluate whether the consortium has been focusing its efforts in the right areas.

While not all ideas in the Year 2 Education Plan were realized, much was achieved. Through this adaptive approach, the consortium now has a clear idea of what can be accomplished in a full year of effort. Looking back, it is clear we have had a very successful second year, and have the foundation to continue improving into the future.



What a remarkable year for the Richland Countywide Stormwater Consortium!!! The Watershed Institute was held for the first time in Columbia South Carolina;

Richland got represented at South Carolina Environmental Conference and at StormCon, the world's largest storm water conference. In these tough economic times, nothing can beat managing a program by collaborative approach. That being said, the Richland Countywide Stormwater Consortium provided a platform for all the stakeholders in achieving the set goals through effective sharing of available resources. I am happy to inform you that Stormwater Management has been successful in playing all the major roles of collaborative approach, namely leadership, encourager, participant and liaison. I look forward for another enthusiastic education year.

***--Srinivas Valavala,
Richland County
Stormwater Manager***



Executive Summary



In the News...

Richland stormwater protections in effect

Measure is effort by county to protect lakes, streams and rivers

"Based on what we see in the ordinance that has been passed by Richland County," [SC DHEC spokesman] Berry said, "we're satisfied they've met what they needed to do."

- *The State*, Feb. 2, 2010

Community works to restore water quality

"Richland County is on its way to put a plan in place to improve water quality in the Crane Creek Watershed."

- *WACH FOX MidlandsConnect.com*,
March 4, 2010

"South Carolinians love their lakes and rivers. People want clean water," said Carol Kososki, who lives on Forest Lake and chairs the county's Conservation Commission. "It's a quality-of-life issue that's very important to people."

- *The State*, Jan. 18, 2010



Plans are in motion to fix Crane Creek's long list of problems.

On Thursday night, the Crane Creek Watershed Association met with residents to talk about how they plan to clear up the water quality issues. "While doing the plan itself we completed three projects," says Srinivas Valavala of the Department of Public Works, "and there are three more projects that are in progress right now." The Crane Creek Watershed Association was formed two years ago and since then buffers have been restored, filters installed, and streams stabilized. "The data is promising and the quality seems to be improving," said Valavala.

- *WACH FOX MidlandsConnect.com*,
March 4, 2010

In the News...



RCSC - FY 2008-2009 Annual Report

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Richland MS4's

The Richland Countywide Stormwater Consortium includes Richland County and two small municipalities. At a joint Proclamation Signing event (p. 24), in November 2009, the partners publicly committed to working together towards improving water quality in the county through education and outreach. All partners contributed to the consortium's efforts by attending meetings, providing input on programming priorities, and assisting with educational programs.



Richland County is a committed member of the Stormwater Consortium. We believe that the partnership of the consortium best serves the educational and outreach needs of our All-America Community by enhancing our knowledge of water quality issues that improves quality of life!

*-- J. Milton Pope
County Administrator,
Richland County*

Table 1. Summary of Local Consortium Representatives

Co-permittees	Consortium Representatives
Richland County	Milton Pope, Administrator Srinivas Valavala, Stormwater Manager
City of Forest Acres	Mark Williams, Administrator Shaun Greenwood, Asst. Administrator
Town of Arcadia Lakes	Richard Thomas, Mayor Christine Murphy, Town Clerk Bob Bishop, Council Member



Richland's MS4's

Education Partners

The Richland Countywide Stormwater Consortium’s 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 education partners formed the backbone of education efforts, leading education initiatives relating to their specific areas and collaborating on larger projects. New partners were added in year 2 as well, and their unique skill sets enhance the variety of programs the consortium is able to offer.

Table 2. Summary of Local Education Service Partners

Organization	Representative
Richland County Stormwater Education	Keith Anthony
Richland County Planning	Jim Wilson Anna Almeida
Richland County Roads & Drainage	Carlton Hayden
Richland County Solid Waste	Alan Huffstetler
Richland County Public Information Office	Stephany Snowden Jennifer Dowden Tamara King
South Carolina Department of Health and Environmental Control - Bureau of Water	Rebecca Spratlin, Amanda Ley
Richland Soil & Water Conservation District	Mary Jane Henderson, Hugh Caldwell, Charlie Fisher
Richland County Conservation Commission	Jim Wilson Carol Kososki
Gills Creek Watershed Association	Jessica Artz, Pamela Greenlaw
Keep the Midlands Beautiful	Heidi Johnson
Town of Blythewood	Michael Criss
Richland County Master Gardeners Association	Ryan Nevius

Continued...



KEEP THE MIDLANDS
BEAUTIFUL

CLEMSON
MASTER GARDENER



Richland Soil and Water
Conservation District



Education Partners

Education Partners

Table 2. Summary of Local Education Service Partners, Continued

Organization	Representative
Sustainable Midlands	Ryan Nevius
Richland County 4-H	Paulette Gay
Carolina Children's Garden	Chanda Cooper
Congaree Riverkeeper	Alan Merhzad, Stuart Greeter
Sonoco Recycling and Green Steps Schools	Jane Hiller
East Piedmont Resource Conservation & Development	Reginald Hall
USC Green Quad	Jason Craig, David Whiteman
South Carolina State Museum	Tom Falvey
Riverbanks Zoo & Botanical Garden	Ed Diebold, Keith Benson
South Carolina Forestry Commission	James Miller
Carolina Ready-Mix Concrete Association	Jason Wimberly
Fuss & O'Neill	Betsy Kaemmerlen
BP Barber and Associates	Geoff Smith Erica Huggins



CONGAREE RIVERKEEPER®



Education Partners



Mission & Goals



The EPA encourages permittees in a geographic area to establish cooperative agreements in implementing their stormwater programs. Partnerships and agreements between permittees and/or other agencies can minimize unnecessarily repeating activities and result in using available resources as efficiently as possible. Using existing tools and programs instead of creating new ones can allow permittees to focus resources on high priority program components instead. In addition by forming partnerships, water quality can be examined and improved on a larger, consolidated scale rather than on a piece-meal, site-by-site basis.

EPA 2010 MS4 Permit Improvement Guide

RCSC Mission Statement

Support the restoration and protection of healthy waterways in Richland County through outreach, stormwater education, public involvement, and partnerships with local governments, citizens, businesses, schools, and organizations.

Goals:

1. Maximize stormwater education efforts by using a regional/watershed approach. Develop and implement education strategies addressing the range of stormwater pollutants using a prioritized approach that capitalizes on local training resources.
2. Involve citizens in stormwater management and change behaviors to improve environmental protection and awareness.
3. Facilitate collaboration among local organizations interested in watershed-related education to best meet the needs of local communities.
4. Through partnerships with MS4s, leverage local education resources and organized outreach programs to meet NPDES permit requirements for public stormwater education and outreach to achieve greater water resource protection.
5. Participate in collaborative stormwater education that can be universally presented and applied.



Mission and Goals



2009-2010 Overview

During year 2, the Richland County Stormwater Consortium increased both the quantity and quality of its education and public involvement programs. The number of people impacted by our activities rose by 156% over 2008-2009. Impacts increased for all audience and pollutant categories, as well as for general audiences and general awareness (Figures 1 & 2, p. 6). Education efforts also reached a new audience in year 2 - businesses. The commercial sector plays a large roll in water quality, as they have the capacity to cause pollution on a larger scale, particularly through illicit discharge. They may also have more resources than private homeowners when it comes to implementing pollution control measures such as rain water harvesting and bioretention.

Table 3 shows a comparison of program outputs from year 1 to year 2. While it may take many years to demonstrate that the consortium's programs are producing the desired outcomes (greater awareness, behavior change, and improved water quality), tracking our outputs shows improvement in immediate program objectives such as numbers of volunteers participating and pounds of trash removed from waterways.

Table 3. Comparison of Education and Involvement Program Outputs between Year 1 and Year 2

	Year 1 2008-2009	Year 2 2009-2010	Percent Increase
Total impacts	283,345	725,668	156%
Total activities	41	88	115%
Education partners participating	13	20	54%
Stormwater consortium meetings	3	12	300%
Cleanup volunteers participating	2,685	3,338	24%
Pounds of trash removed	66,143	116,859	77%
Erosion control inspectors certified	276	596	116%
Rain barrels made or sold	106	408	285%
Festivals attended	6	15	150%
Rain gardens installed	1	6	500%



Sesquicentennial State Park
-- Photo Credit: Elliot Powell

“Because of the intricate connections between waters, lands and people, river conservation work encourages whole-system, long-term thinking, organizing and action. In fact, successful river conservation work requires it. There is power and magic in this fact. Perhaps no other human endeavor forces us to apply so many disciplines; look at issues from so many perspectives; or connect so many economic, social and environmental concerns... Watersheds are literally common ground.”

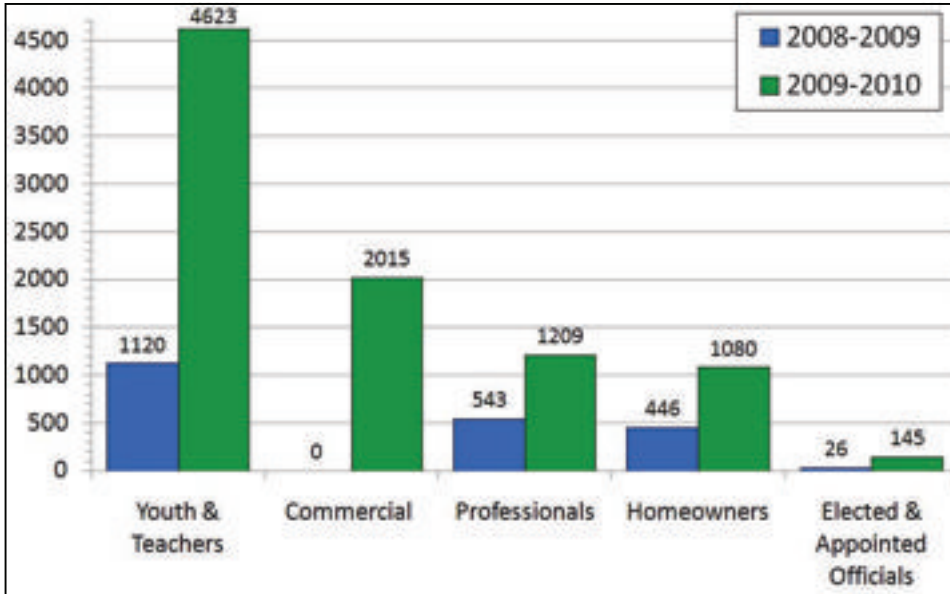
*- Ryan Nevius,
Sustainable Midlands
March E-Newsletter*

2009-2010 Overview



2009-2010 Overview

Figure 1. Number Impacted, by Target Audience

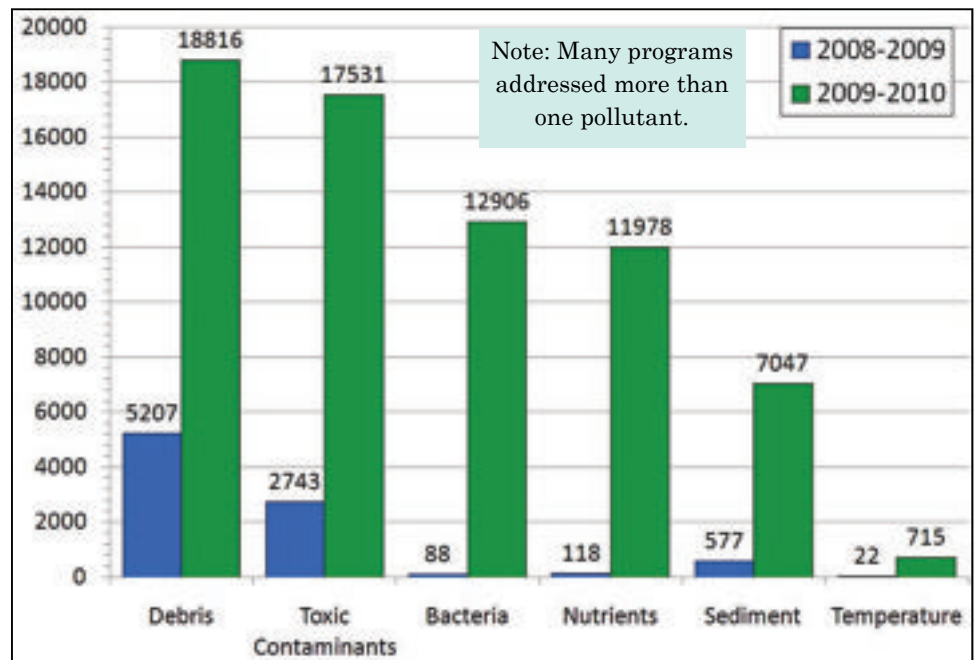


In both figures, numbers from mass media campaigns and storm drain marking have been omitted. Both of these efforts reach huge numbers of people, but with less direct impact than a more formal program, and therefore are not comparable.

The number of people reached by outreach and education efforts increased for all categories of pollutants in Year 2 compared to Year 1. Bacteria and nutrients in particular increased considerably, due largely to the emphasis on pet waste in our education programs. While many programs were general in nature, such as displays at festivals, emphasis was put on including information on specific pollutants on display boards, brochures, magnets, and other media.

In Year 2, extra effort was made to look beyond programs for the general public and create targeted programs for specific audience groups. Rain garden and rain barrel workshops attracted homeowners, and conferences and trade shows were excellent venues for reaching businesses and professional audiences. Elected and appointed officials are a smaller group, but likewise have a lot of influence on how citizens perceive and use local water resources, so having an ongoing relationship with county council will continue to be a priority. Youth were well represented in Year 1, but the addition of classroom visits, afterschool programs, and day camps increased the material covered and improved the effectiveness of the learning experience.

Figure 2. Number Impacted, by Target Pollutant





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 D. The complete report is available on the Carolina Clear website at <http://www.clemson.edu/public/carolinaclear/surveys.html>.

Evaluation - Telephone Survey



Priority Watershed - Gills Creek

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Gills Creek Watershed Association	Public presentations on the Gills Creek Watershed	8 presentations during the year	230	N/A
GCWA	Presentations to Homeowner Associations on Gills Creek Watershed	3 presentations during the year	36	N/A
GCWA	GCWA monthly e-Newsletter	Ongoing	400	N/A
GCWA	GCWA Annual Meeting	Clemson Sandhills REC, Sept. 13, 2009	30	Richland County
GCWA	Wheels Across the Watershed Fundraiser - Bus tour through Gills Creek Watershed.	Oct. 11, 2010	40	N/A

The Gills Creek Watershed is a highly impaired urban watershed running through Richland County, Arcadia Lakes, Forest Acres, and the City of Columbia. It was the first priority watershed to be addressed by Richland County, beginning in 2007 with stakeholder meetings resulting in the formation of the Gills Creek Watershed Association. GCWA is a non-profit organization with the goal of restoring the watershed through education, grass roots action, public and private partnerships, remediation projects, and controlled development. To raise awareness of the watershed and promote stewardship, GCWA gives presentations to the public, schools (p. 19), and homeowner associations, organizes cleanups (p. 17), maintains a website and Facebook page, and distribute an e-newsletter. Annual meetings and volunteer opportunities keep members connected, and fundraisers such as Wheels Across the Watershed, a bus tour highlighting positive and negative features of the watershed, raise money to fund restoration projects while educating participants about water quality problems in the watershed.



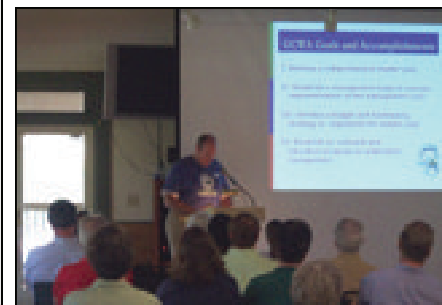
Lake Katherine



Top Right: Sediment from construction entering Forest Lake

Bottom Left: Wheels Across the Watershed fundraiser.

Bottom Right: Board President Elliot Powell speaks at the annual meeting.



Visit the Gills Creek Watershed Association website, www.gillscreekwatershed.org/ for more information

Priority Watersheds & Pollutants



Priority Watershed - Crane Creek

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	Crane Creek Watershed management planning stakeholder meeting	Richland County Administration Bldg. Oct. 1, 2009 & March 4, 2010	19 & 15, respectively	Center for Watershed Protection
Richland County	Crane Creek Watershed Association public meetings	Crane Creek Community Center Dec. 14, 2009 & March 4, 2010	50	Center for Watershed Protection
Carolina Clear	Crane Creek Watershed Association brochure developed for distribution at events	Completed in June, 2010	Not assessed	Richland County, Center for Watershed Protection

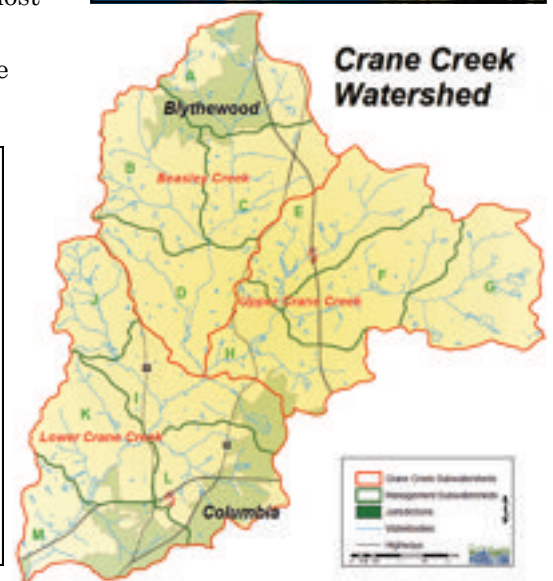
The Crane Creek Watershed was the second priority watershed addressed by Richland County. Beginning with a stakeholder meeting in 2008, the county identified individuals and organizations with an interest in protecting this watershed. Crane Creek is also impaired in several areas, but not as heavily as Gills Creek, and has more undeveloped land and greater potential for conservation. During the 2009-2010 reporting year, the Center for Watershed protection did a thorough study of the watershed and drafted a management plan. The University of South Carolina drafted a strategic plan for forming a Crane Creek Watershed Association. Additional stakeholder and public meetings were held to assess the needs, concerns and interests of citizens connected to the watershed. At the most recent meeting in March 2009, citizens volunteered for committees within the newly forming association. The next steps will be to elect officers and continue community outreach to build awareness of the watershed.



Top Right: Scenic view of Lake Elizabeth

Bottom Left: Srinivas Valavala speaks at a public meeting

Bottom Right: Map of the Crane Creek Watershed, from the watershed management plan.



Documents and additional information available at the Richland County Stormwater website, www.richlandonline.com/departments/publicworks/NPDES_MS4.asp

Priority Watersheds & Pollutants

Target Pollutant: Bacteria - Pet Waste Campaign

Lead Provider	Activity	Location and Date Delivered	Number of Impacts	Other Providers Involved
Richland County	Pet waste and stormwater awareness signs posted at Richland County parks and facilities	Fall 2010	46 signs posted	N/A
Carolina Clear	Pet waste brochures distributed to veterinary offices	May and June, 2010	16 veterinary offices, 400 brochures total	N/A
Richland County	Pet waste brochures mailed with pet registration renewal letters.	Ongoing	100 brochures mailed	Carolina Clear
Richland County	Pet waste brochures distributed, misc.	Ongoing	2700	Carolina Clear

Monitoring by Richland County staff has determined fecal coliform bacteria to be the pollutant of greatest concern in county waterways. This year RCSC began a campaign to encourage citizens to clean up their pet's waste. In September, eye-catching signs were created and placed at all Richland County parks and county government buildings. In February, a pet waste tri-fold brochure was designed to give more detailed information on the issues resulting from pet waste. The brochures were distributed to 16 veterinary offices throughout the county. Also, Richland County Animal Care now includes a pet waste brochure in the pet registration renewal letters it mails. The brochures were also handed out at festivals and events. Plans for the future include placing pet waste signs at all Richland County libraries, distributing pet waste brochures at pet supply stores, and targeting apartment complexes for pet waste outreach.



Priority Watersheds & Pollutants



General Public - Mass Media

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 Richland, Lexington, and Sumter Counties)	N/A
Carolina Clear	Palmetto People Interview on Time Warner Cable	Midlands, August through December 2009	< 185,111 (number of subscribers in Richland, Lexington, and Sumter Counties)	N/A

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.”

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



General Public

General Public - Internet

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Clemson	Clemson University Carolina Clear web page for Richland County	Ongoing	1,791 page views	N/A
Many	Education Partner Facebook Pages	Ongoing	1,892 "fans"	N/A

The Richland Countywide Stormwater Consortium website has grown exponentially since its completion in May 2009. Over the past year, the site has grown from 8 to 13 pages, and has received 1,791 total page views, compared to 265 view reported in Year 1.

Nearly all of our education partners have their own websites for sharing information (Appendix E), and many are also connecting to the public using social media sites. Facebook pages let organizations build a dynamic community network for promoting programs, sharing news, and facilitating discussions on issues related to stormwater, pollution, water resources, and sustainability. The Richland County Stormwater Management website also features an "Ask the Stormwater Guru" link where citizens can email their questions to the department.

By keeping up with technology trends, we can reach a broader audience, including environmentally-minded young adults eager to be involved in their community.

<u>Education Partner Facebook Page</u>	<u># of Fans</u>
<i>Gills Creek Watershed Association</i>	<i>86</i>
<i>Keep the Midlands Beautiful</i>	<i>744</i>
<i>Congaree Riverkeeper</i>	<i>667</i>
<i>Sustainable Midlands</i>	<i>346</i>
<i>University of South Carolina Green Quad</i>	<i>49</i>
<i>Richland County Stormwater Department</i>	<i>Newly launched June 2010</i>

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

General Public



General Public - Newsletters

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County Conservation District	Stormwater activities featured in Richland County Soil and Water Conservation District Newsletter	January 2010	700	N/A
Richland County Conservation Commission	Stormwater activities featured in Richland County Conservation Commission Newsletter	January 2010	700	N/A
Sustainable Midlands	Stormwater Article in Sustainable Midlands E-Newsletter	March 2010	1100	N/A
Richland County	Stormwater Department featured in the <i>Richland Review</i> employee e-newsletter	March 19, 2010	1600	N/A

Sustainable Midlands
Creating sustainable communities for today and for future generations.

Our Rivers, Our Drinking Water

What happens if your dog drops his tennis ball down a storm drain? You can grab a canoe and go search for it in the waters of the Congaree because our storm sewer system, the grates you see along roads connect to pipes, dumps water directly into our streams, rivers and lakes. Storm sewers channel the rain that falls on hard surfaces, roofs, parking lots, roads or lawns, all the water that does not seep into the ground.

This rain, or stormwater, flows directly into storm drains and carries lawn chemicals, car oil, trash and other debris directly into the streams, rivers, and lakes the source of our drinking water. It is a common belief that this runoff goes to a water treatment facility. Not so. This toxic mix poses serious health risk to local communities, fish and wildlife. Of course we don't drink directly from our streams, rivers or lakes, but our water treatment plants are only designed to remove specific chemicals meaning many pollutants can still end up in our drinking water.

Litter, yard waste and pet waste also gets swept up by stormwater. Water from people washing cars or watering lawns flows into storm sewers carrying debris and pollutants into our drinking water sources. The yard and pet waste can result in algae blooms that kill fish and destroy natural habitats. Yard debris also clogs storm drains so streets flood during heavy rains. All of the unfiltered, waste water makes our native streams and riversides unpleasant places to visit and for wildlife to live. Maxcy Gregg and Martin Luther King Park on Rocky Branch Creek are public parks are filled with the litter carried by stormwater.

Links
Click here to Facebook.

Events Calendar
July 2010
7/1-16 SCWF Photo info at www.scwf.org

7/8 Renew! Reby Sculpture Workshop 9AM to 12:30PM for Contemporary Art

7/8 Green Drinks 5:30 to 7:00PM

7/10 Palmetto Co Sparkleberry Festival. For more info 803-771-0870 or email dene@palmetto.com

7/20 Scler Power Columbia Metro Convention Center 4:30 Call Mike 803-348-2258 or online at JohnMillerSC.com

7/31 Spend the d Palmetto Center Fort Jackson Park Workshop 9AM-12 Cedar Creek Festival 1PM For more 803-771-0870 or dene@palmetto.com

AUGUST 2010
8/3 GREEN DRINK COLUMBIA at The

School Builds Rain Garden as Demonstration

Students at Bookman Elementary School helped build a Rain Garden near the school as an innovative water quality component of the landscape area. Teachers will use the area for demonstrations of green design to improve water quality and reduce storm water runoff. The project was coordinated in partnership with the Richland Conservation District and funded through the Conservation Commission and local donations. We applaud Bookman for their initiative and accomplishments.

Pebble Creek Watershed Protected For Conservation

Several landowners in Pebble Creek Watershed have executed conservation easements on their property to protect valuable natural resources and the rural integrity of Pebble Creek Watershed. Land not cleared for development offers water quality enhancement for streams, wetlands, and wildlife habitat. We salute the leadership in this community to promote conservation stewardship.

Richland County Conservation Commission Newsletter

General Public - Brochures

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	"Drains to a Stream" brochures distributed	Ongoing	300 brochures	N/A
Richland County	"Put the Brakes on Water Pollution" brochures distributed	Ongoing	300 brochures	N/A
Richland County	Illicit Discharge Detection & Elimination program brochures distributed	Ongoing	550 brochures	N/A
Richland County	Industrial High Risk brochures distributed: Best Management Practices	Ongoing	250 brochures	N/A
Richland County	Industrial High Risk brochures distributed: Runoff Program	Ongoing	250 brochures	N/A
Richland County	Pesticide/Herbicide/Fertilizer brochures distributed	Ongoing	400 brochures	N/A
Richland County	"A Fish's Wish" activity books distributed	Ongoing	1750 brochures	N/A
Carolina Clear	Refrigerator magnets designed and distributed to raise awareness to the Stormwater hotline - why, when, and who should be called for what reason.	Ongoing from July 2009	2000 magnets	Richland County



Brochures on a wide range of pollution related topics were distributed throughout the year at festivals, public hearings, trainings, inspections, and other contacts with the public. Some were designed for general awareness, while other targeted specific pollution issues, such as industrial high risk runoff.

To provide Richland County residents an easy way to have their stormwater questions answered and issues addressed, Richland County set up a dedicated hotline for stormwater calls. To raise awareness of this hotline, a refrigerator magnet was developed and distributed at public events.



General Public



General Public - Festivals

Festivals and fairs offer a great opportunity to reach lots of people at one time. By drawing visitors with colorful displays, hands-on activities, and handouts on a variety of topics, RCSC can build general awareness of stormwater pollution, answer questions one-on-one, and provide detailed information on specific issues. Education partners participated in fifteen festivals throughout the year.

Left: Richland County Stormwater Education Coordinator Keith Anthony talks to homeowners at the Sparkleberry Country Fair.

Below: Volunteers from the Gills Creek Watershed Association lead children in hands-on exploration of a model watershed at the Rooftop Rhythms Festival in Forest Acres.



General Public



General Public - Festivals

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Gills Creek Watershed Association	Stormwater education display at the Forest Acres National Night	Trenholm Park, Aug. 3, 2010	200*	Forest Acres
Gills Creek Watershed Association	Stormwater education display at Rooftop Rhythms Festival	Forest Acres Mall, October 8, 2009 & April 29, 2010	3,000 & 250, respectively	Forest Acres
Gills Creek Watershed Association	Stormwater education display at Farmville	EdVenture Museum, March 20, 2010	120	EdVenture Museum
Gills Creek Watershed Association	Stormwater education display at “All Creatures Great & Small” animal festival	Forest Lake Presbyterian Church, April 18, 2010	250	Carolina Clear
Richland County, Gills Creek Watershed Association	Stormwater education display at Earth Day at the State House	SC State House, April 22, 2010	100	Environmentalists, Inc.
Gills Creek Watershed Association	Stormwater education display at Nature Fest	Congaree National Park, April 24, 2010	100	Congaree National Park
Richland County, Gills Creek Watershed Association	Stormwater education displays at the Sparkleberry Country Fair	Clemson Sandhills REC, April 24, 2010	30,000	Master Gardeners, Carolina Clear
Gills Creek Watershed Association	Stormwater education display at the Rosewood Crawfish Festival	May 1, 2010, Rosewood Drive, Columbia	100	RC Conservation District
Richland County	Stormwater education display at County Council District 7 Spring Fling Drop-in	May 12, 2010	45	N/A
Richland County	Stormwater education display at Blythefest	Trinity United Methodist Church, Blythewood, May 14, 2010	2500	Town of Blythewood
Richland County	Stormwater education display at the Black Expo	Colonial Life Arena, May 22, 2010	10,000	N/A
Gills Creek Watershed Association	Stormwater education display at the Forest Acres Festival	AC Flora HS, May 22, 2010	3,000	Forest Acres, Richland County, Forest Acres Rotary Club

*All numbers reported here are estimated total festival attendance.

General Public

General Public - Community Cleanups

Lead Provider	Activity	Delivered	Number of Participants	Other Providers Involved
Keep the Midlands Beautiful	Adopt-A-Highway --48,135 pounds of trash removed from Richland County roadways	Ongoing	2617 volunteers contributed more than 5260 hours of service	N/A
KMB	Adopt-A-Waterway --3,907 pounds of trash removed from Richland County waterways	Ongoing	333 volunteers contributed 1147 hours of service	N/A
KMB	Third Saturday Community Cleanups --3,315 pounds of trash removed	3rd Saturday of each month, from Sept. 2009	118 volunteers contributed 316 hours of service	N/A
KMB	Miscellaneous Community Cleanups --6,1502 pounds of trash removed	Ongoing, Midlands	226 volunteers contributed 833 hours of service	N/A
Gills Creek Watershed Association	Lower Gills Creek Cleanups	Gills Creek from Shop Rd. to Bluff Rd., 8/1/09, 9/26/10, 5/8/10	44 Volunteers	Congaree River-keeper

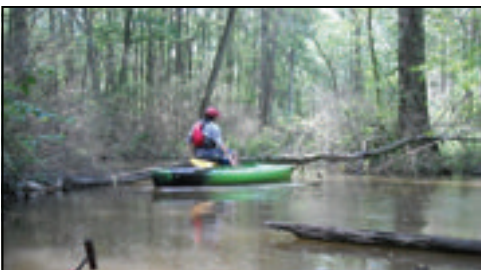


Keep the Midlands Beautiful, an affiliate of Keep America Beautiful, coordinates litter pickups, beautification projects, and recycling programs for thousands of Richland and Lexington county residents each year.

Left: In September 2009, KMB introduced a new program called Third Saturday Cleanups. At the kickoff event, River Sweep at the Riverbanks Zoo, 100 volunteers removed trash and recyclables from the banks of the Saluda River, including

- 90 bags of litter
- 701 aluminum cans
- 744 glass bottles
- 460 plastic bottles

Right: Among the miscellaneous cleanups, students from Northwestern University spent their spring break in Columbia cleaning up an illegal dump site next to Little Jackson Creek. They picked up over 80 large bags of trash and 100+ tires.



Left: The Gills Creek Watershed Association held three cleanup session on Lower Gills Creek. The goal of these cleanups was not only to remove trash, but also to clear woody snags to make the section of the Creek accessible for canoes and kayaks. GCWA hopes that by encouraging recreation on Gills Creek will increase awareness of the watershed and the pollution issues it faces.

3338 volunteers removed over 116,859 lbs. of trash from Richland County Waterways!

General Public



General Public - Miscellaneous

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	Public forums on proposed stormwater ordinances, including leaf bagging and buffers.	Every Tuesday in September, 4 locations through out the County	125	Richland County Neighborhood Association
Richland County Solid Waste	Presentations on illegal dumping and recycling at community meetings	19 meetings throughout the county	380	N/A
Richland County	Richland County Recycles Day	Sandhills REC November 14, 2009	7000	Solid Waste Division



At Richland County's celebration of America Recycles Day, residents brought **420,000 lbs** of computers, mattresses, old appliances, batteries, documents to be shredded, and other household waste to Sandhills REC to be recycled. This event supplements the regular recycling program by taking items too large or unusual for pickup or drop-off centers. It also keeps harmful materials, such as the heavy metals and chemicals found in computers and batteries from being improperly disposed of in illegal dumping sites and making their way into Richland County waters.



To further educate citizens on debris issues, Richland County Solid Waste Department spoke at 19 homeowners association and community meetings about recycling options and penalties for illegal dumping. In the fall of 2009, Richland County Council asked for public feedback as it considered a number of ordinances relating to stormwater, including mandating buffers for new construction and bagging yard waste (p. 27). Although the yard waste ordinance did not pass, a pilot program was begun in a few neighborhoods. The Town of Arcadia Lakes requires yard debris placed at the curb for pick-up to be in bags or containers.

General Public



Youth & Teachers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Carolina Clear	Enviroscape Presentations at Bookman Road Elementary School	Bookman Road ES, December 2009	288	N/A
Carolina Clear	Enviroscape Presentations at Killian Elementary School Science Day	Killian ES, April 1, 2010	65	N/A
Gills Creek Watershed Association	Enviroscape and Local Watersheds Presentations at Dent Middle School	Dent Middle School, March 29 & April 27, 2010	141	Carolina Clear
Carolina Clear	Enviroscape Presentations for After-School Programs	Three Richland County Community Centers, March & April, 2010	51	Richland County Recreation Commission



The Enviroscape™ Watershed Model formed the backbone of youth education programs, from schools to festivals. This detailed model allows kids to get a hands-on lesson about stormwater pollution. Students identify sources of point and non-point source pollution in a community and watch as “rain” from a squirt bottle moves the pretend pollutants through the watershed and into a lake. The model teaches this complex concept in a way that is clear and captivating for children and allows the instructor to cover a wide range of pollutants, from fertilizer to thermal pollution.

Left: students at Bookman Road Elementary brainstorm together in this interactive lesson.

Youth & Teachers



Youth & Teachers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Carolina Clear, 4-H	4H2O Pontoon Classroom day camp	Lake Murray, June 15-19, 2009	20	Lexington County Stormwater Consortium, others



4-H2O Pontoon Classroom is a day camp in format, but much more in content. Twenty students ages 10-12 from Richland and Lexington Counties spent the week exploring Lake Murray on pontoon boats, swimming, and learning about Columbia's natural water resources. They toured the Auxiliary Coast Guard station and drinking water treatment plant, caught fish with a seine net, and conducted chemical and biological water quality tests. Class size is kept small to ensure the strongest possible learning experience, and each child is challenged at the end of the week to go back to his or her school and share his or her new knowledge and experiences with others. Pontoon Classroom has been held at Lake Murray for ten years, and RCSC is excited to join this effort. Plans for 2010 include expanding the camp with a second week for older students.



Youth & Teachers



Youth & Teachers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	Stormwater booth at Richland 101 for Kids	Dutch Square Mall, July 23, 2009	1100	Carolina Clear
Richland County	Stormwater education display at Touch-a-Truck	Decker Blvd., April 17, 2010	200	N/A
Carolina Clear	Stormwater education display at Play It Safe Fair	Kohl's, Columbia, May 1, 2010	250	Gills Creek Watershed Association
Richland County	Stormwater education tent at Richland County National Public Works Week Kids Day	Richland County Public Works, May 18, 2010	120	N/A



Top Left: Stormwater display at Touch-a-Truck

Top Center: "The Dripster," Richland County's stormwater mascot makes friends at Richland 101 for Kids.

Top Right: Students check out a rain garden at Public Works Week Kids Day.

Right: Richland County's Stormwater Trailer serves as "outreach on wheels," displaying pollution prevention tips as it carries equipment to and from events.



Youth & Teachers



Youth & Teachers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Carolina Clear	School Presentations on Rain Gardens	Bookman Road ES School, Oct. 30, 2009	561	Bookman Road Elementary
Carolina Children's Garden	Children's Rain Garden Program	Carolina Children's Garden at Sandhills REC, Feb. 26, 2010	7	N/A
Carolina Clear	Rain Garden Work Day	Bookman Road ES, June 1, 2010	41	Bookman Road Elementary
Carolina Clear	Rain Barrels at Ridgeview High School Career Prep Class	Ridgeview HS	17	4-H



Stormwater management projects are not just for adults! In October, in preparation for a rain garden installation at their school (p. 30), students at Bookman Road Elementary watched an interactive presentation to understand the purpose of the garden (top left). In June, 3rd and 4th graders at the school had a work day to maintain the garden, removing sand, trimming native grasses, and spreading mulch (lower left).



New education partner Carolina Children's Garden also held a program to teach children about the rain garden that Master Gardeners incorporated into the Children's garden in the Spring of 2008.



Right: Career Prep students at Ridgeview Elementary learned about stormwater pollution and built two rain barrels. The students plan to sell these barrels to raise money for class field trips.



Youth & Teachers



Youth & Teachers - Higher Education

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
USC Green Quad Learning Center	Student Project: Retrofitting a gravel drain into a bio-swale.	USC Campus, Completed April 2010	12	Richland County Conservation Commission

As part of her Honors College requirements, USC undergraduate Cynthia Harbison chose to retrofit a gravel drainage area along the side of a dorm building at the Green Quad Learning Center. Funded by a grant from the Richland County Conservation Commission, this installation served as both a beautification project for USC campus and a learning experience for Cynthia and the other 11 students who helped make her vision a reality. The garden features a 49 gallon Flo-Well® Storm Water Leaching System, which collects rainwater directly from the downspout and then leaches the water out. A perforated drain pipe beneath the soil and gravel handles excess water from the large roof.



Cynthia Harbison provides more photos and details of her project at [www.greenquadcommunity.org/index.php?title=Creating a Greener View: Retrofit into a Bioswale](http://www.greenquadcommunity.org/index.php?title=Creating_a_Greener_View:_Retrofit_into_a_Bioswale)

“Being in a community of environmentally concerned students has really enriched the past year of my life working at the Green Quad. With their support, I chose the topic to build a bioretention garden on campus to pair with my dual interests in sustainability and biology. This project has really expanded my knowledge of the way that natural ecosystems work as well as how to construct a bioretention garden as well. I hope that this project will inspire future Honor’s College students or interns at the Green Quad Learning Center to further improve the project that I have started and to expand on it.”

*- Cynthia Harbison
USC Honors Student*

Youth & Teachers



Elected & Appointed Officials

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	Presentation to Richland County Council on the Stormwater Consortium	Richland County Administration Bldg. July 27, 2009	6	Carolina Clear
Carolina Clear	Presentation on Carolina Clear for Richland County Council	Richland County Admin. Bldg. Sept. 15, 2009	50	Richland County Stormwater
Carolina Clear	Joint Proclamation Signing by County, City, and Town Councils	Forest Acres City Hall, October 15, 2009	33	Richland County, Forest Acres, Arcadia Lakes
Richland County	Stormwater program update for Richland County Council	Richland County Admin. Bldg. January 22, 2010	20	N/A
Carolina Clear	Presentation on Carolina Clear for Blythewood Town Council	Blythewood Community Center, May 11, 2010	10	N/A
Richland County	National Public Works Week Proclamation to Richland County Council	Richland County Admin. Bldg., May 4, 2010	11	Richland County Public Works
Gills Creek Watershed Association	Presentation for Richland County Conservation Commission Project Tour	Tree of Life Rain Garden, Arcadia Lakes, May 24, 2010	15	Richland County Conservation Commission

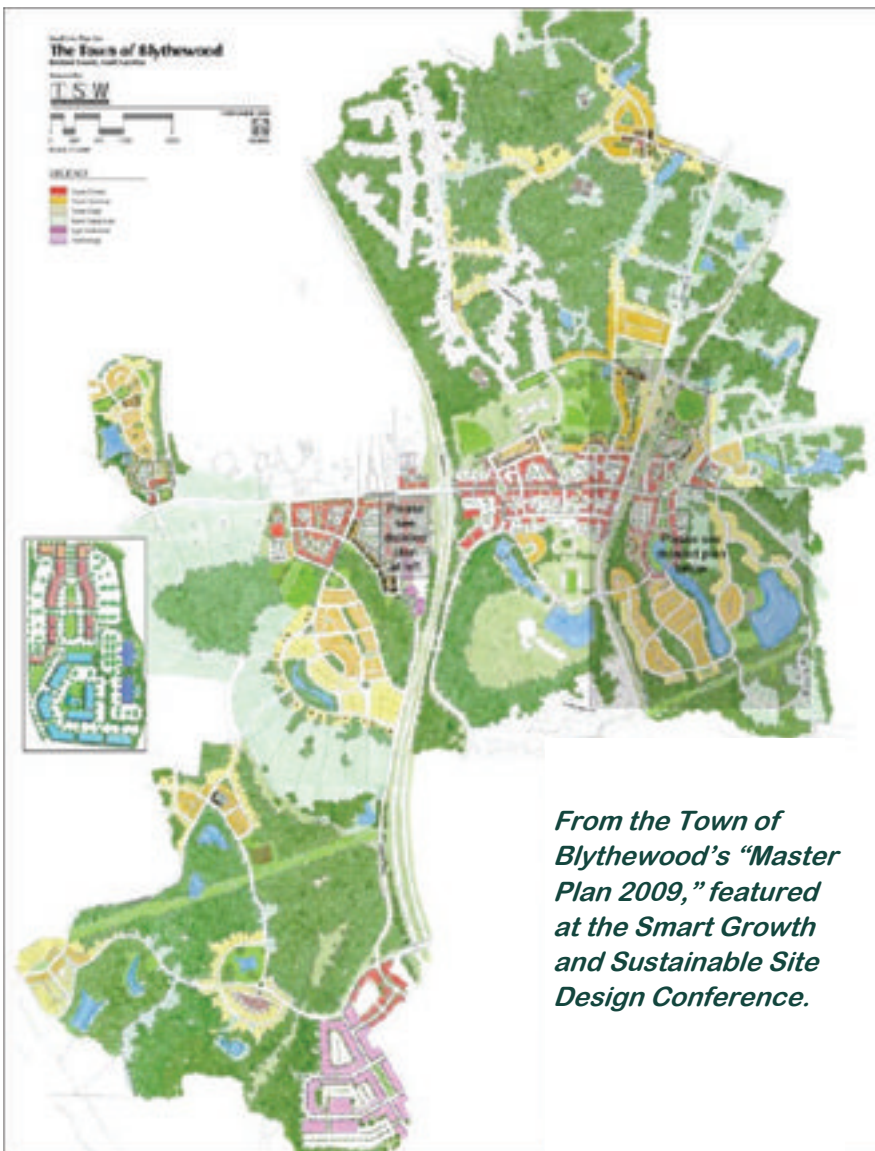
On October 6, 2009, representatives from Richland County, the City of Forest Acres, and the Town of Arcadia Lakes signed a proclamation to officially adopt a regional stormwater runoff education strategy through the Richland Countywide Stormwater Consortium. The signing was a great step forward, demonstrating commitment from the local governments, and officially introducing the Richland Countywide Stormwater Consortium to the public. The event was attended by members of the local environmental community and covered on WACH FOX nightly news.



Elected & Appointed Officials

Professionals: Contractors & Engineers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	2009 Watershed Institute Annual Conference	Sept. 22-25, 2009 Clarion Hotel, Columbia	100	Center for Watershed Protection
Town of Blythewood	Smart Growth and Sustainable Site Design Conference	Oct. 20-21, 2009 Midlands Tech	98	Many



Two professional conferences were held in Richland County dealing with stormwater control. These addressed topics such as the latest best management practices and the role of stormwater management in sustainable design. At the Watershed Institute, held in partnership with the Center for Watershed Protection, participants from all over the country, including Puerto Rico and Guam, representing watershed groups, local municipalities, and state and federal agencies, gained knowledge and tools to complete effective and comprehensive management plans within their watersheds.

The Smart Growth and Sustainable Site Design Conference was hosted by the Town of Blythewood. Although Blythewood is not an MS4, town leadership has taken a proactive approach to managing water quality and other environmental issues as the community grows. Richland County stormwater staff participated in the development process of the Town of Blythewood's 2009 Master Plan, which incorporates many low impact design principles.

Richland County also participates in the South Carolina Association of Stormwater Managers (SCASM) and the Climate Protection Association of Columbia (CPAC). Both organizations allow the county to interact with local and regional professionals in stormwater and environmental fields.

Professionals: Contractors & Engineers

Professionals: Contractors & Engineers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	Presentation at regional Stormwater Monitoring Workshop	Dec. 7, 2009, Town of Lexington Municipal Complex	78	Johnston, Inc., Richland County Conservation District
Richland County	Presentation on Urban Watershed Planning at the South Carolina Environmental Conference	March 13, 2010, Myrtle Beach, SC	30	Water Environmental Federation
Richland County	Three Presentations at StormCon	Aug. 17-20, 2009, Anaheim, CA	135	StormCon
Clemson	Certified Erosion and Prevention & Sediment Control and Inspector (CEPSCI) courses	Midlands Technical College, 6 courses conducted during the year.	596	DHEC and DOT

Presentations at StormCon 2009

<u>Title</u>	<u>Number Attended</u>
<i>Stormwater Program Management Track - Richland County MS4 NPDES Phase I Permit</i>	100
<i>A South Carolina Case Study: Developing a Comprehensive Management Plan for Crane Creek</i>	20
<i>A Prioritization Framework for the Gills Creek Watershed Management Plan</i>	15

In addition to local programs for professional audiences, Richland County also gave presentations on its stormwater program at regional, state, and national level conferences. Stormwater Manager Srinivas Valavala spoke about Richland County's stormwater initiatives at two national conferences, one in Myrtle Beach, and the other in Anaheim, California. Participating in larger scale events like these gives the county the opportunity to share what it has achieved and learned, obtain feedback from others in the same field, and gain perspective on its program quality as compared to others in the state or nation.



<u>Date</u>	<u>Location</u>	<u>Number Attended</u>
<i>CEPSCI Initial Certification Training</i>		
Oct., 13 2009	Columbia	85
Mar. 24, 2010	Columbia	97
<i>CEPSCI Recertification Training</i>		
Jan. 13, 2010	Columbia	65
Apr. 7, 2010	Columbia	88
May 5, 2010	Columbia	105
Jun. 9, 2010	Columbia	88
Total:		596

CEPSCI is a course from Clemson University that prepares personnel to inspect sites for proper management of sediment for water quality.

Professionals: Contractors & Engineers

Professionals: Contractors & Engineers

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County Planning Dept.	"Green" display at Richland County Administration Building	RC Administration Building, Completed	Not assessed	N/A
Richland County	Development Roundtable	March 2009-present	32	Center for Watershed Protection



In order to encourage developers to "go green" Richland County has constructed a beautiful "green" display on the first floor lobby of the county administration building. The display includes a mock rain garden, with live plants, pervious pavement examples, and a rain barrel. A special "Green Wall of Fame" features several Green Developments with conservation easements to protect valuable natural resource areas. The goal is to recognize developers who go the extra mile to include earth-friendly design elements that improve our communities, enhance water quality, and preserve valuable green space.



To facilitate environmentally sensitive development in Richland County, a "Development Roundtable" was created to bring together representatives from the development community, local government, and environmental groups, which was tasked with coming to a consensus on a set of recommendations that County Council could apply to update and improve its development codes. The 32 participants developed a set of recommendations to minimize impervious cover, conserve natural areas and promote distributed stormwater management, code language for residential streets and parking lots, lot development, conservation of natural resources and stormwater management.



The roundtable members met in subcommittee groups multiple times from March through July 2009, and the full group reached a consensus and presented the final set of 22 recommendations to the County Council in September. The roundtable also drafted a proposed change to the County's stormwater ordinance. Stormwater staff gave presentations for County Council to explain the technical aspects of the changes (p. 24). Public hearings were held to help Richland County citizens understand the proposed changes and offer an opportunity for feedback (p 18). The majority of the Development Roundtable's language was accepted by council, effective February 2, 2010. The roundtable is currently working through a similar process for the remaining recommendations.

- Development Roundtable**
Meeting Dates
July 08, 2009
July 29, 2009
Sept 16, 2009
Nov 20, 2009
Dec 18, 2009
May 21, 2010

Professionals: Contractors & Engineers



Homeowners

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	Storm drain marking, accompanied by stormwater awareness door hanger.	Richland County, Summer 2008	273,750	N/A
SC DHEC, Keep the Midlands Beautiful	Central Midlands Lawn Mower Exchange	Colonial Life Arena, April 10, 2010	100	Richland County, Lexington County, City of Columbia, USC
Clemson	Master Gardener Training Course	Richland County, 17 Weeks of training	55	Past Certified Master Gardeners

Richland County Public Works Stormwater Division began a project in the summer of 2008 with the goal of marking storm drains on county roads in every neighborhood in the county. During the summer of 2009, Richland County continued the marking program with student interns from the Youth Works program, increasing the number of marked drains to 75%. Stormwater staff estimate that the marking efforts will be completed by September 2010.

For Earth Day, Richland and Lexington County residents were invited to trade in their gasoline-powered lawn mowers in exchange for a deep discount on the purchase of environmentally-friendly electric mowers to promote cleaner air and reduce fuel spills and leaks in the Midlands.

The Master Gardener program from Clemson Extension teaches homeowners advanced information on growing edible and ornamental plants. By emphasizing principles such as “right plant - right place” and smart watering practices, and careful fertilizer and pesticide usage, the program also helps gardeners protect water quality in their own backyards.



“Oh yeah, I’ve seen those! They have a thing on them that says No Dumping, Drains to River!”

- Student at Bookman Road Elementary, when asked if he had seen storm drains in his neighborhood.

During Enviroscope presentations at Bookman Road Elementary (p. 19,) students in all five 5th grade classes recalled seeing the storm drain markers and were familiar with their slogan. Storm drains in the neighborhoods around the school were marked during the summer of 2008.

Homeowners



Homeowners

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland Soil & Water Conservation District	Rain Barrels sales	Midlands, ongoing	23 rain barrels sold	N/A
Keep the Midlands Beautiful	Rain Barrel and Compost Bin Off-the-truck Sale	Harbison Blvd, Columbia, Oct. 24, 2009	353 rain barrels sold	N/A
Carolina Clear, Richland County	Build-Your-Own Rain Barrel Workshop	Richland County Public Works, May 15, 2010	32 participants	N/A



32 participants constructed their own rain barrels from used plastic drums donated by PepsiCo at a workshop at the Richland County Public Works facility.

Rain water harvesting reduces stormwater pollution by controlling the volume of runoff water coming from roofs, reducing erosion, and increasing infiltration by allowing water to be utilized when the soil is dry. Plus, homeowners love it because it saves them money! Nearly half of the water used annually by the average home is used outdoors. At a hands-on workshop in May, homeowners not only built their own barrels to use at home, but got a morning class on stormwater management and ways to reduce pollution through their daily actions.



At an off-the-truck sale in October, Keep the Midlands Beautiful sold 353 rain barrels to Midlands residents for less than half their retail cost.



Between RCSC's workshop and sales by the Richland County Conservation District and Keep the Midlands Beautiful, 408 rain barrels went home with midlands residents. At 50 gallons each, on average, that's up to 20,800 gallons of water retained per rain storm!

Homeowners



Homeowners

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland Conservation District, NRCS,	Rain Garden installation and demonstration work-	Bookman Road Elementary, Nov. 7, 2009	22 volunteers	Richland County, Master Gardeners



Rain gardens are springing up all over Richland County! In on November 7, 22 volunteers participated in a rain garden installation workshop at Bookman Road Elementary. Heavy erosion and sandy soil made this site a great candidate for a rain garden, and a grant from the Richland County Conservation Commission made the idea a reality. After a morning of educational presentations on stormwater pollution and bioretention, volunteers planted shrubs, grasses, and perennials to slow the flow of water from downspouts and stop erosion on the school's playground. Students learned about the function of their rain garden and have helped maintain it (p. 22)



Volunteers from the Tree of Life Congregation, Arcadia Lakes Navy, and Gills Creek Watershed Association installed a rain garden at the Tree of Life Temple, also with a grant from the Conservation Commission (following page). Together with an expansion of the Sandhills REC Rain Garden, two new installations by Richland County at Public Works and Owens Field Airport, and a student project on the University of South Carolina campus (p. 23), *six new bio-retention projects were completed during the 2009-2010 reporting year!*



Before...



After!

Homeowners



Homeowners

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County Master Gardeners	Rain Garden installation and demonstration	Clemson Extension at Sandhills REC, October 24, 2009	12 participants	Clemson Carolina Clear
Arcadia Lakes, Tree of Life Congregation	Rain Garden installation	Tree of Life Temple, Arcadia Lakes, Dec. 2009-April 2010	47 volunteers	Richland County Conservation Commission, Gills Creek Watershed Association
Richland County	Rain Garden installation with educational signage	Richland County Public Works, Sept. 2009	400 visitors	N/A
Richland County	Rain Garden installation	Owens Field Airport, completed June 2010	N/A	N/A



Volunteers build a boardwalk for the Tree of Life rain garden.



The rain garden at Richland Co. Public Works treats run-off from the facility's parking lot. Colorful signage explains the garden's function to visitors.



Each year Master Gardeners add to a rain garden built in May 2008.



Newly installed rain garden at Owens Field Airport.

Homeowners

Commercial Citizens

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County, Carolina Clear	Informational Displays at Green is Good for Business Conference	Columbia Metropolitan Convention Center, Sept. 1, 2009	325	Keep the Midlands Beautiful
Carolina Clear	Presentation on Green Landscaping at Green is Good for Business Conference	Columbia Metropolitan Convention Center, Sept. 1, 2009	20	N/A
Richland County Conservation District	Caring for Creation Green Congregation Conference	Riverbanks Zoo, Nov. 1, 2009	70	Carolina Clear, Richland County, Green Steps
Clemson Extension Horticulture	Presentation of "Rain Gardens: Where, How, & Why" at the annual South Carolina Landscape and Turfgrass Association Conference & Tradeshow	SC State Fairgrounds, Jan. 27, 2010	700	South Carolina Landscape and Turfgrass Association



At the Green is Good for Business Conference, local businesses discovered how they could draw on earth-friendly principles to cut costs and attract customers.

Making the Connection with Water-Stormwater Runoff Management for the Business Owner

Katie Giacalone
Clemson University Carolina Clear

Green is Good for Business Conference
September 1, 2009
Columbia, SC

Carolina Clear Statewide Coordinator Katie Giacalone spoke at the Green is Good for Business Conference on green landscaping practices, such as rain gardens and rain water harvesting.



Participants from a wide variety of faiths learned how their places of worship could become more green at the Caring for Creation Conference.

Commercial Citizens



Internal Trainings

In order to keep Richland County staff up to date on the latest practices, tools, and regulations, the following trainings were conducted for stormwater department staff, or other county employees.

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Richland County	Pole Camera Training for Stormwater Staff	8/3/09, RC Public Works	8	N/A
Richland County	Best Management Practices for Urban Water Treatment & Webinar	8/27/09, RC Public Works	8	N/A
Richland County	Best Management Practices for NPDES permit Compliance - IDDE program	11/19/09, RC Public Works	8	Johnston Inc.
Richland County	NPDES Stormwater Compliance - General Regulations & Definitions	12/21/09, RC Public Works	8	N/A
Richland County	Sanitary Sewer Provider Meeting	12/21/09 & 3/25/10 Richland County Adult Activity Center	20 & 15, respectively	N/A
Richland County	Corps of Engineers - Training for stormwater staff on the roll of the Corps in stormwater management in Richland County.	2/9/10, RC Public Works	23	Corps of Engineers
Richland County	Spill Prevention Control and Countermeasure Training for Fire Station Staff	5/25/10, Columbia	50	N/A

In addition, several staff members received training at major conferences elsewhere in the state and nation. At StormCon and the South Carolina Environmental Conference, stormwater manager Srinivas Valavala gave presentations on Richland County's initiatives to other professionals attending the conferences (p. 26).

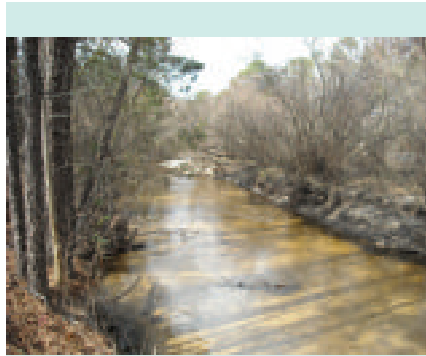
Conference	Location and Date Delivered	Number of Staff Attending
StormCon 2009	8/17/09, Anaheim, CA	2
WetLand Regulation Conference	1/29/10, Columbia, SC	1
International Erosion Control Association Conference	2/15/10-2/20/10, Dallas, TX	5
South Carolina Environmental Conference	3/13/10, Myrtle Beach, SC	1

Internal Trainings



Conclusions for Year 2 (2009-2010)

Lead Provider	Activity	Location and Date Delivered	Number of Participants	Other Providers Involved
Carolina Clear RCSC	The Richland Countywide Stormwater Consortium	12 monthly business meetings	varied RCSC members per meeting	All MS4's and Educational Partners



In Year 2, the Richland Countywide Stormwater Consortium focused on strengthening partnerships, developing new programs and building an activity base that could be repeated into the future. Developing contacts and establishing formats for programs such as rain garden projects, rain barrel workshops and after-school visits allows these to become permanent parts of the annual education plan. Going into the future the consortium will continue to add to its repertoire of repeatable activities while taking advantage of new opportunities as they arise.

Using the data gathered with telephone survey, the consortium can identify behaviors and attitudes that can be improved through education efforts. The survey showed that Richland County residents care about water quality and with proper motivation were willing to get involved in protecting water resources. The consortium's challenge is to help them understand that water pollution does impact them directly whether or not they notice it. They also need to be made aware and inspired by what local groups like the Gills Creek Watershed Association are already doing to protect Richland County's watersheds. 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 RCSC with a baseline for future comparisons. Evaluation is essential to improving education and outreach efforts, and in the next year the partners will strive to build an evaluation step into as many activities a possible.

In the upcoming year, RCSC will continue to increase programs targeting specific pollutants and audiences that have a direct impact on them, such as a construction conference to address sediment and a pesticide, herbicide and fertilizer conference to target nutrients and toxic contaminants. The consortium also plans to tailor more programs for specific audiences. For example, a "water friendly" business recognition program will reward commercial citizens who take steps to reduce polluted runoff from their sites. By diverging from more traditional activities like fairs and festivals, RCSC can diversify its programs for greater reach and impact.

Conclusions



Conclusions for Year 2 (2009-2010)



*Ride the tributaries
to reach the sea...*

- Arabian Proverb



The Richland Countywide Stormwater Consortium will also endeavor to make better use of local mass media resources. Statewide mass media was utilized successfully with commercials on Time Warner Cable, but there are many more opportunities to reach county residents with messages pertinent to the local area. Richland County’s public information office produces radio and television programs with which stormwater messages could be broadcast. Newspaper articles in *The State* and *Free Times* are other opportunities to communicate to large local audiences.

Building new partnerships and strengthening current relationships with local education providers will also be important to the future of RCSC. The City of Columbia received its Phase I MS4 permit in January 2010, and Richland County is committed to working with Columbia to improve regional water quality. An example of this is a collaborative effort between the city and county to host a water quality festival in August of 2010. The festival, called “Summer Celebration of Water” will showcase local non-profit organizations, government agencies, green businesses, and outdoor outfitters who have a strong interest in protecting water quality.

Richland County recognizes that education, outreach and public involvement are important components of every aspect of its stormwater program. When capital improvement projects are undertaken, meetings are held to discuss issues with key members of the community impacted by the project. Every stormwater inspection of a business or industrial facility that results in a fine is a teachable moment in disguise. Improving education and outreach requires that RCSC recognize these opportunities and make the most of them to maximize our impact.

The Richland Countywide Stormwater Consortium had a successful year in 2009-2010, building on the lessons learned and partnerships gained in 2008-2009. Looking forward to the next year of work, the continued dedication of the municipalities and education partners will provide the strength needed to continue to grow and improve programming, working towards our goal of improving water quality in Richland County.



Conclusions



Appendix A - Year 2 Education Plan of Work: 2009-2010

Table 4. Education Plan of Work - Year 2 Initial Plan Developed July 2009, Page 1

ADAPTIVE Stormwater Education Plan		Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres							Living Document (last revised: 8/24/09)			
Lead Service Provider	Activity--Program (<i>Italics include participation elements</i>)	Target Geography/ Land Use	Target Pollutant(s)									Participation by other Service Providers
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolved Oxygen	Debris	Temperature	Other	
General Public												
Richland County	Raise awareness to the Stormwater hotline - why, when, and who should be called for what reason	Richland County	x	x	x	x	x					Clemson Carolina Clear, DHEC
Clemson Carolina Clear	Radio Advertisements	Midlands	x									Richland County
Richland County	Earth Day Project (Lawnmower Exchange)	Richland County			x							KMB, many others
Keep the Midlands Beautiful	Adopt-A-Highway Program	Richland County								x		
Keep the Midlands Beautiful	Adopt-A-Waterway Program	Richland County								x		
Keep the Midlands Beautiful	Riversweep	Richland County								x		
Richland Conservation District	District newsletter featuring rain barrels	Richland County	x									
Richland County & Clemson Carolina Clear	Public Access TV Commercial and Advertisement	Richland County	x									
Richland County	Recycle Day	Richland County			x							Solid Waste
Forest Acres, Gills Creek Watershed Association	Rooftop Rhythms Festival	Forest Acres	x									Forest Acres
Congaree National Park, Gills Creek Watershed Association	Nature Fest	Richland County	x									Congaree National Park
Forest Acres Rotary Club, Gills Creek Watershed Association	Forest Acres Festival	Forest Acres	x									Forest Acres, Richland County, Forest Acres Rotary Club
Richland County	Sparkleberry Country Fair	Richland County	x									

Continued...

Appendix A - Year 2 Education Plan of Work: 2009-2010



Appendix A - Year 2 Education Plan of Work: 2009-2010

Table 4. Education Plan of Work - Year 2 Initial Plan Developed July 2009, Page 2

ADAPTIVE Stormwater Education Plan		Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres				Living Document (last revised: 8/24/09)						
Lead Service Provider	Activity-Program (<i>Italics include participation elements</i>)	Target Geography/ Land Use	General Stormwater Awareness	Target Pollutant(s)								Participation by other Service Providers
				Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolved Oxygen	Debris	Temperature	Other	
General Public												
Gills Creek Watershed Association	Public presentation on the Gills Creek Watershed	Richland County	x	x	x	x						
Gills Creek Watershed Association	Community Watershed Clean-up	Richland County							x			
Richland County	National County Government Week	Richland County										
Clemson Carolina Clear	Water Quality Publications	Richland County	x									Richland County
Richland County	State Fair	Richland County	x									Clemson Carolina Clear
Gills Creek Watershed Association	Presentation for Gills Creek Annual Meeting	Richland County										Clemson Carolina Clear
Richland County	Stormwater public workshops on leaf bagging and buffer ordinances	Richland County	x									Clemson Carolina Clear
Richland County	Water Environment Federation Conference											
Clemson Carolina Clear	Articles in the <i>Free Times</i> Newspaper	Richland County	x									
Youth / K-12 / Teachers												
Richland County	Richland 101 (Kids Day) Activities and information delivered to inform kids and their parents about Stormwater related issues	Richland County	x									
Richland County	Public Works Week	Richland County	x									Department of Public Works Divisions
Conservation District	Conservation Station - develop a module on Stormwater runoff and pollution prevention and deliver it at upcoming Conservation Station events	Richland County		x		x	x					Clemson Carolina Clear

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Appendix A - Year 2 Education Plan of Work: 2009-2010



Appendix A - Year 2 Education Plan of Work: 2009-2010

Table 4. Education Plan of Work - Year 2 Initial Plan Developed July 2009, Page 3

ADAPTIVE Stormwater Education Plan		Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres										Living Document (last revised: 8/24/09)		
Lead Service Provider	Activity-Program (<i>italics include participation elements</i>)	Target Geography/ Land Use	General Stormwater Awareness	Target Pollutant(s)										Participation by other Service Providers
				Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other			
Youth / K-12 / Teachers														
Richland County	Utilization of existing learning stations featuring stormwater equipment	Richland County	x											
Gill Creek Watershed Association	Watershed Curriculum at Dent Middle School	Richland County												Arcadia Lakes, Dent Middle School
Clemson Carolina Clear	Green Steps Projects with local schools	Richland County												Green Steps, Keep the Midlands Beautiful
Clemson Carolina Clear	4H2O Pontoon Classroom day camps	Richland County	x	x	x	x	x	x	x	x	x	x	x	4H
Elected and Appointed Officials and High-Level Staff														
Richland County & Clemson Carolina Clear	Richland County's County Council awareness presentation of the importance of Stormwater regulations and general Stormwater projects and programs. (NEMO presentation)	Richland County	x											SC Sea Grant, KMB
Clemson Carolina Clear	Presence at public discussions of stormwater regulations	Richland County												Richland County
Clemson Carolina Clear	Presentations for the Chamber of Commerce	Richland County												Richland County
Clemson Carolina Clear	Joint presentations for Lexington and Richland County Councils	Midlands												Richland County, Lexington County

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Appendix A - Year 2 Education Plan of Work: 2009-2010

Table 4. Education Plan of Work - Year 2 Initial Plan Developed July 2009, Page 4

ADAPTIVE Stormwater Education Plan		Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres						Living Document (last revised: 8/24/09)				
Lead Service Provider	Activity-Program (<i>Italics include participation elements</i>)	Target Geography/ Land Use	General Stormwater Awareness	Target Pollutant(s)								Participation by other Service Providers
				Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolve Oxygen	Debris	Temperature	Other	
Professionals: Contractors, Engineers, Developers												
Richland County	Industrial Operators Conference	Richland County	x				x					
Clemson University	Clear Water Contractors	Richland County					x	x				
Clemson University	CEPSCI (Certified Erosion Prevention and Sediment Control Inspector)	Richland County					x	x				
Richland County	Developers Conference	Richland County										Engineering
Richland County	Construction Conference	Richland County										
Richland County	Best Management Practices (BMP's) Training	Richland County										
Richland County	2009 Stormwater Institute Annual Conference	Richland County										
Carolina Ready Mix Concrete Association	Presentation for development firms on how to include pervious pavers when designing stormwater systems	Richland County										Richland County,
Clemson Carolina Clear	Presentation for the Development Roundtable	Richland County										Richland County,
Homeowners & Homeowner Associations												
Richland County, Arcadia Lakes	Storm drain marking, accompanied by Stormwater awareness door hanger.	Richland County	x	x			x	x		x		Clemson Carolina Clear
Richland County	Promote storm drain marking already completed by the county through newspapers, newsletters and local channels.	Richland County	x	x			x	x		x		Clemson Carolina Clear
Richland County Master Gardeners Association	Rain garden installations and demonstration workshops	Richland County	x									All

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Appendix A - Year 2 Education Plan of Work: 2009-2010



Appendix A - Year 2 Education Plan of Work: 2009-2010

Table 4. Education Plan of Work - Year 2 Initial Plan Developed July 2009, Page 5

ADAPTIVE Stormwater Education Plan		Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres							Living Document (last revised: 8/24/09)			
Lead Service Provider	Activity--Program (<i>Italics include participation elements</i>)	Target Geography/ Land Use	General Stormwater Awareness	Target Pollutant(s)								Participation by other Service Providers
				Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolved Oxygen	Debris	Temperature	Other	
Homeowners & Homeowner Associations												
Richland County	Beautification Day	Richland County	x									Keep the Midlands Beautiful, RC Special Services
Carolina Clear	Build a Rain Barrel Workshops	Richland County	x		x	x						
Soil & Water Conservation District	Rain Barrel Sales with accompanying newsletter articles	Richland County										
Richland County	Richland County Neighborhood Council - include articles in electronic newsletter to HOAs across the county	Richland County		x		x	x		x			Clemson Carolina Clear
Arcadia Lakes	Stormwater Awareness bill stuffer will be mailed out with tax bill.	Arcadia Lakes	x	x	x	x	x		x			Clemson Carolina Clear
Richland County	Yard Clippings Bagging Outreach	Richland County										
Richland County	Organic Gardening Yard of the Month Project	Richland County			x		x					
Richland County	Neighborhood Planning Conference	Richland County										
Carolina Clear	Carolina Yards & Neighborhoods Program	Richland County	x				x	x		x		
Master Gardener Association	Water Wise Garden recognition category in Yard of the Month program, through Master Gardener Association	Richland County	x									Clemson Master Gardener Program
Gills Creek Watershed Association, others	Pet Waste Campaign targeting specific neighborhoods and businesses (vets, pet supply stores, grocery stores)	Richland County	x	x								

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Appendix A - Year 2 Education Plan of Work: 2009-2010

Appendix A - Year 2 Education Plan of Work: 2009-2010

Table 4. Education Plan of Work - Year 2 Initial Plan Developed July 2009, Page 6

ADAPTIVE Stormwater Education Plan		Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres										Living Document (last revised: 8/24/09)				
Lead Service Provider	Activity-Program (<i>Italics include participation elements</i>)	Target Geography/ Land Use	General Stormwater Awareness	Target Pollutant(s)										Participation by other Service Providers		
				Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Pollutants resulting in low Dissolved Oxygen	Dobson	Temperature	Other					
Commercial Citizens																
Clemson Carolina Clear	Partnering for Water Quality presentation to the Chamber of Commerce - how businesses can get involved in water quality protection.	Richland County				x							x			Clemson Cooperative Extension Service, Richland County
Clemson Carolina Clear	Business Recognition Program	Richland County	x	x		x		x	x	x	x	x	x	x		Richland County
Clemson Carolina Clear	General Stormwater Awareness presentations to Rotary Club	Richland County	x													
Richland County	Pesticides, Herbicides, and Fertilizer (PHF) Inspections to bring awareness about proper use of these products and regulate storage of these products.	Richland County				x								x		
Clemson Carolina Clear	Brochure in Spanish for landscaping businesses and employees.	Richland County	x											x		
Richland County	Distribute brochures at the Business License Bureau	Richland County	x													Carolina Clear

Appendix A - Year 2 Education Plan of Work: 2009-2010

Appendix B - 2009-2010 Education Activity Data

Table 6. Education Plan of Work - 2009-2010 Activity Data, Page 1

ADAPTIVE Stormwater Education Plan			Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres										Living Document (last revised: 6/10/2010)				
Lead Service Provider	Activity or Program	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	Debris	Temperature	Other							
General Public																	
Richland County	Refrigerator Magnets designed and distribute to raise awareness to the Stormwater hotline	Richland County	x	x	x	x	x	x						Carolina Clear	July 2009	2000	
Carolina Clear	Richland Countywide Stormwater Consortium Website	Richland County	x												Ongoing	1,791 page views	
Many	Education Partner Facebook Pages	Richland County	x												Ongoing	1892 fans	
Gills Creek Watershed Association	Gills Creek Clean-up	Richland County	x								x			Congaree Riverkeeper	8/1/09, 9/26/10, 5/8/10 Lower Gills Creek Area	44	
Carolina Clear	Stormwater Awareness Public Service Announcement on Time Warner Cable	Richland County	x	x	x				x						August - December 2009	<185,111 (Richland, Lexington, Sumter Cable subscribers)	
Carolina Clear	Palmetto People interview with Carolina Clear Statewide Coordinator on Time Warner Cable	Richland County	x												August - December 2009	<185,111 (Richland, Lexington, Sumter Cable subscribers)	
Gills Creek Watershed Association	Forest Acres National Night	Forest Acres	x											Forest Acres	8/3/09, Trenholm Park	200	
Richland County	Stormwater public forums on leaf bagging and buffer ordinances	Richland County	x					x	x					Carolina Clear	Tuesdays in Sept. 2009, four locations throughout county	125	
Gills Creek Watershed Association	Gills Creek Watershed Association Annual Meeting	Richland County	x	x							x				9/13/09, Sandhills REC	30	
Clemson University Restoration Institute	Environmental Attitudes & Behaviors Survey	Midlands	x	x	x	x	x	x						Clemson Dept. of Sociology & Anthropology	July-Aug. 2009, Richland, Lexington, & Sumter Counties	403	Telephone Survey
Gills Creek Watershed Association	Wheels Across the Watershed Fundraiser	Richland County	x									Flood-plain management			10/11/2010, bus tour through Gills Creek Watershed	40	
Richland County	Richland County Recycles Day	Richland County			x						x			Solid Waste	10/14/09, Sandhills REC	7000	
Richland County	Stormwater and Pet Waste signs posted at county facilities and parks	Richland County	x	x					x						Fall & Winter 2010	46 signs posted	

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Appendix B - 2009-2010 Education Activity Data

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Table 6. Education Plan of Work - 2009-2010 Activity Data, Page 2

Lead Service Provider	Activity or Program	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	Number Impacted/ Reached	Assess- ment Type	
			General Stormwater	Ascaris/ova	Bacteria	Toxic Contaminants, pesticides, herbicides, pesticides, heavy metals	Sediment	Nutrients	Debris	Temperature	Other						
General Public																	
Gills Creek Watershed Association	Display at Farmville	Richland County	x	x										Adventure Museum	3/20/10, Adventure Museum, Columbia	120	
Gills Creek Watershed Association	Display at "All Creatures Great and Small" Festival	Richland County	x	x										Forest Lake Presbyterian Church, Carolina Clear	4/18/10, Forest Lake Presbyterian Church	250	
Gills Creek Watershed Association, Richland County	Display at Earth Day at the State House	Richland County	x	x							x			Environmentalists, Inc.	4/22/10, SC State House Grounds	100	
Congaree National Park, Gills Creek Watershed Association	Display at Nature Fest	Richland County	x											Congaree National Park	April 24, 2010 Congaree National Park	100	
Richland County, Gills Creek Watershed Association	Displays at Sparkleberry Country Fair	Richland County	x											Carolina Clear, Richland Master Gardeners	April 24, 2010 Sandhills REC	30000	
Gills Creek Watershed Association	Display at Rosewood Crawfish Festival	Richland County												Soil & Water Conservation District	5/1/10, Rosewood Drive, Columbia	100	
Richland County	Display at County Council District 7 Spring Fling Drop-in	Richland County													5/12/10	45	
Richland County, City of Blythewood	Display at Blythefest	Richland County	x	x										Town of Blythewood	5/14/10, Trinity United Methodist Church, Blythewood	2500	
Richland County	Display at the Black Expo	Richland County	x												5/22/10, Colonial Life Arena	10,000	
Forest Acres Rotary Club, Gills Creek Watershed Association	Display at Forest Acres Festival	Forest Acres	x											Forest Acres, Richland County, Forest Acres Rotary Club	May 22, 2010	3000	
Carolina Clear	Pet Waste Brochures distributed to Veterinary offices	Richland County	x	x							x				May & June 2010	16 offices, 400 brochures	
Carolina Clear	Pet Waste Brochures mailed with Richland County pet registration renewal letters	Richland County	x	x							x			Richland County Animal Care	Ongoing	100	
Richland County	Pet Waste Brochures Distributed, Misc	Richland County	x	x							x				Ongoing	2700	
Richland County	Illicit Discharge Detection & Elimination program brochures distributed	Richland County	x	x	x						x				Ongoing	550	

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Appendix B - 2009-2010 Education Activity Data



Appendix B - 2009-2010 Education Activity Data

Table 6. Education Plan of Work - 2009-2010 Activity Data, Page 3

ADAPTIVE Stormwater Education Plan			Year 2 (2009-10) - Richland County, Arcadia Lakes and Forest Acres										Living Document (last revised: 6/10/2010)				
Lead Service Provider	Activity or Program	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	Debris	Temperature	Other							
General Public																	
Richland County	Refrigerator Magnets designed and distribute to raise awareness to the Stormwater hotline	Richland County	x	x	x	x	x	x						Carolina Clear	July 2009	2000	
Carolina Clear	Richland Countywide Stormwater Consortium Website	Richland County	x												Ongoing	1,791 page views	
Many	Education Partner Facebook Pages	Richland County	x												Ongoing	1892 fans	
Gills Creek Watershed Association	Gills Creek Clean-up	Richland County	x									x		Congaree Riverkeeper	8/1/09, 9/26/10, 5/8/10 Lower Gills Creek Area	44	
Carolina Clear	Stormwater Awareness Public Service Announcement on Time Warner Cable	Richland County	x	x	x										August - December 2009	<185,111 (Richland, Lexington, Sumter Cable subscribers)	
Carolina Clear	Palmetto People interview with Carolina Clear Statewide Coordinator on Time Warner Cable	Richland County	x												August - December 2009	<185,111 (Richland, Lexington, Sumter Cable subscribers)	
Gills Creek Watershed Association	Forest Acres National Night	Forest Acres	x											Forest Acres	8/3/09, Trenholm Park	200	
Richland County	Stormwater public forums on leaf bagging and buffer ordinances	Richland County	x					x	x					Carolina Clear	Tuesdays in Sept. 2009, four locations throughout county	125	
Gills Creek Watershed Association	Gills Creek Watershed Association Annual Meeting	Richland County	x	x								x			9/13/09, Sandhills REC	30	
Clemson University Restoration Institute	Environmental Attitudes & Behaviors Survey	Midlands	x	x	x	x	x	x						Clemson Dept. of Sociology & Anthropology	July-Aug. 2009, Richland, Lexington, & Sumter Counties	403	Telephone Survey
Gills Creek Watershed Association	Wheels Across the Watershed Fundraiser	Richland County	x										Flood-plain management		10/11/2010, bus tour through Gills Creek Watershed	40	
Richland County	Richland County Recycles Day	Richland County			x							x		Solid Waste	10/14/09, Sandhills REC	7000	
Richland County	Stormwater and Pet Waste signs posted at county facilities and parks	Richland County	x	x								x			Fall & Winter 2010	46 signs posted	

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Table 6. Education Plan of Work - 2009-2010 Activity Data, Page 4

Lead Service Provider	Activity or Program	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	Number Impacted/ Reached	Assess- ment Type
			General Stormwater	Asbestos	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Debris	Temperature	Other					
Youth / K-12 / Teachers																
Carolina Clear	4H2O Pontoon Classroom day camp	Midlands	x	x	x	x	x	x	x	x			4H	June 15-19, 2009, Lake Murray	20	Quiz
Richland County	Richland 101 (Kids Day) Activities and information to inform kids and parents about Stormwater related issues.	Richland County	x											7/23/09 Dutch Square Mall	1100	
Carolina Clear	Rain Garden presentations at Bookman Road Elementary School	Richland County	x	x	x	x		x						10/30/09, Bookman Road ES	561	
Carolina Clear	Enviroscape Presentation at Bookman Road Elementary School	Richland County	x	x	x	x	x	x	x					December 2009, Bookman Road ES	288	
Carolina Clear	Rain Barrels at Ridgeview High School	Richland County	x	x	x	x	x	x	x			RC 4H Program	1/22/2010 Ridgeview HS	17		
Carolina Children's Garden	Rain Garden Program	Richland County	x	x	x	x	x							2/26/10, Carolina Children's Garden	7	
Carolina Clear	Enviroscape Presentation at Killian Elementary School Science Day	Richland County	x	x	x	x	x	x	x					4/1/2010, Killian Elementary School	65	
Gills Creek Watershed Association	Enviroscape Presentation at Dent Middle School	Richland County	x	x	x	x	x	x	x			Carolina Clear	3/29/10 & 4/27/10, Dent Middle School	141		
Carolina Clear	Enviroscape Presentations for After-School Programs	Richland County	x	x	x	x	x	x	x			Richland County Recreation Commission	March & April, 2010, Richland County Recreation Centers	51		
Richland County	"A Fish's Wish" activity books distributed	Richland County	x	x	x	x	x	x					Ongoing	1750		
Richland County	Display at Touch-a-Truck	Richland County	x										4/17/2010, Decker Blvd.	200		
Richland County	Display at Play It Safe Fair	Richland County	x										5/1/10, Kho's Store, Columbia	250		
Richland County	Public Works Week	Richland County	x									Department of Public Works Divisions	5/18/10, Richland Co. Public Works	120		
Carolina Clear	Rain Garden Work Day	Richland County	x			x						Bookman Road Elementary	6/1/10, Bookman Road Elementary	41		
USC Green Quad	Student Project: Bioswale	Richland County	x		x	x	x					Richland County Conservation Commission	USC Campus, Completed April 2010	12		

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Appendix B - 2009-2010 Education Activity Data

Table 6. Education Plan of Work - 2009-2010 Activity Data, Page 5

Lead Service Provider	Activity or Program	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	Debris	Temperature	Other				
Professionals: Contractors, Engineers, Developers																
Richland County	2009 Watershed Institute Annual Conference	Richland County	x	x	x	x	x	x	x	x			Center for Watershed Protection	Sept. 22-25, 2009 Clarion Hotel, Columbia	100	
Town of Blythewood	Smart Growth and Sustainable Site Design Conference	Richland County	x	x		x	x							Oct. 20-21, 2009 Midlands Tech	98	Written Post-survey
Clemson University	CEPSCI (Certified Erosion Prevention and Sediment Control Inspector)	Richland County				x	x							Six trainings, Midlands Tech	596	
Richland County	Development Roundtable	Richland County	x			x							Center for Watershed Protection	March 2009-present	32	
Richland County	Three Presentations at StormCon 2009	National Conference	x		x	x	x							8/17/09, Anaheim, CA	135	
Richland County	Presentation at South Carolina Environmental Conference	National Conference	x		x	x	x						Water Environmental Federation	3/13/2010, Myrtle Beach, SC	30	
Richland County	Presenation at Stormwater Monitoring Workshop	Midlands	x	x	x		x	x	x				Johnston, Inc., RC Conservation District	12/7/09, Town of Lexington Municipal Complex	78	
Richland County	Internal storm water management trainings for Richland County Staff	Richland County	x	x	x	x	x	x	x				Johnston, Inc	Multiple trainings	140, total	
Elected and Appointed Officials and High-Level Staff																
Carolina Clear	Presentation to Richland County Council on the Stormwater Consortium	Richland County	x										Richland County	7/27/09, RC Admin. Bldg.	6	
Carolina Clear, Richland County	Presentation to Richland County Council	Richland County	x											9/15/09, RC Admin. Bldg.	50	
Carolina Clear, Richland County	Joint Proclamation Signing	Richland County	x										Forest Acres, Arcadia Lakes	10/06/09, Forest Acres City Hall	33	
Carolina Clear	Stormwater program update for Richland County Council	Richland County	x										Richland County	1/22/10, RC Admin. Bldg.	20	
Carolina Clear	Presentation for Blythewood Town Council	Richland County	x	x										5/11/10 Blythewood Community Center	10	
Richland County	National Public Works Week Proclamation to Richland County Council	Richland County	x											5/4/10, RC Admin. Bldg.	11	
Gills Creek Watershed Association	Presentation for Richland Co. Conservation Commission project tour	Richland County	x										Richland Conservation Commission	5/24/10, Tree of Life Rain Garden, Arcadia Lakes	15	

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Appendix B - 2009-2010 Education Activity Data

Table 6. Education Plan of Work - 2009-2010 Activity Data, Page 6

Lead Service Provider	Activity or Program	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	Drugs	Temperature	Other						
Homeowners & Homeowner Associations																
Richland County, Arcadia Lakes	Storm drain marking, accompanied by Stormwater awareness door hanger.	Richland County	x	x	x		x						Carolina Clear	To be completed Summer 2010	273750	
Richland County	Rain Garden installation with educational signage	Richland County	x											Richland County Public Works, Sept. 2009	400 visitors	
Richland County Master Gardeners Association	Rain garden installations and demonstration workshop	Richland County	x				x							10/24/09, Clemson Sandhills REC	12 participants	
Keep the Midlands Beautiful	Rain Barrel and Compost Bin Off-the-truck Sale	Midlands	x											10/24/2009, Harbison Blvd	353 barrels sold	
Richland Conservation District, RC Conservation Commission, Carolina Clear	Rain garden installations and demonstration workshops	Richland County	x	x	x	x	x						Richland County Public Works, Bookman Rd. ES	11/07/09, Bookman Road ES	22 volunteers	Written Post-survey
Arcadia Lakes, Tree of Life Congregation	Rain Garden installation, with educational flyers	Arcadia Lakes	x										RC Conservation Commission, Gills Creek Watershed Association	Tree of Life Temple, Arcadia Lakes, Dec. 2009-April 2010	47 volunteers	
Richland County	Lawn Mower Exchange	Midlands	x										Keep the Midlands Beautiful, RC Special Services	4/10/2010	100	
Carolina Clear	Build a Rain Barrel Workshop	Richland County	x		x	x							Richland County Public Works	5/15/2010, Richland Co. Public Works	32	Written Post-survey
Richland County	Rain Garden Installation	Richland County	x											Owens Field Airport, completed June 2010	N/A	
Soil & Water Conservation District	Rain Barrel Sales	Richland County	x											Ongoing	23 barrels sold	
Clemson Extension	Master Gardener Training Course	Midlands	x				x	x					Past Certified Master Gardeners	Richland County, 17 Weeks of training	55	
Gills Creek Watershed Association	Presentations to Homeowner Associations on Gills Creek Watershed	Richland County	x											3 presentations during the year	36	

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Appendix B - 2009-2010 Education Activity Data



Appendix B - 2009-2010 Education Activity Data

Table 6. Education Plan of Work - 2009-2010 Activity Data, Page 7

Lead Service Provider	Activity or Program	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	Number Impacted/ Reached	Assessment Type	
			General Stormwater	Asbestos	Bacteria	Toxic Contaminants, petrochemical products, pesticides, heavy metals	Sediment	Nutrients	Debris	Temperature	Other						
Commercial Citizens																	
Richland County, Clemson Carolina Clear	Green is Good for Business Conference: booths	Midlands	x	x	x		x							Keep the Midlands Beautiful	9/1/09, Columbia Metropolitan Convention Center	325	
Clemson Carolina Clear	Green is Good for Business Conference: Presentation on Green Landscaping	Midlands	x	x	x		x							City of Columbia	9/1/09, Columbia Metropolitan Convention Center	20	
Richland Conservation District, RC Conservation Commission	Caring for Creation Green Congregation Conference	Midlands	x		x					x				Richland County, Carolina Clear	11/1/09, Riverbanks Zoo	70	
Richland County	Industrial High Risk brochures distributed		x		x									N/A	Ongoing	500	
Richland County	Pesticide/Herbicide/Fertilizer brochures distributed		x		x		x							N/A	Ongoing	400	
Clemson Extension Horticulture	Presentation of "Rain Gardens: Where, How, & Why" at the annual South Carolina Landscape and Turfgrass Association Conference & Tradeshow	Midlands	x											South Carolina Landscape and Turfgrass Association	1/27/2010, SC State Fairgrounds	700	



Appendix C - Year 3 Education Plan of Work: 2010-2011

Table 6. Education Plan of Work, Year 3, 2010-2011, Page 1

ADAPTIVE Stormwater Education Plan			Year 3 (2010-11) - Richland County, Arcadia Lakes and Forest Acres								Living Document (last revised: 7/15/2010)			
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	pesticides, herbicides, petroleum products	Sediment	Nutrients	Debris	Temperature				
General Public														
Carolina Clear	TV Commercials	Richland County	x											
Richland County & Carolina Clear	Public Access TV Slides	Richland County	x								Ongoing			
Carolina Clear	Articles in the Free Times Newspaper	Richland County	x											
Richland County	Raise awareness to the Stormwater hotline - distribute magnets at events and programs	Richland County	x	x	x	x	x	x			Carolina Clear	Ongoing		
Richland County	Stormwater and Pet Waste signs posted at county buildings and parks	Richland County	x	x			x							
Carolina Clear	Pet Waste Brochures distributed to Veterinary offices & pet supply stores	Richland County	x	x			x							
Keep the Midlands Beautiful	Adopt-A-Highway Program	Midlands							x			Ongoing	Pounds collected	
Keep the Midlands Beautiful	Adopt-A-Waterway Program	Midlands							x			Ongoing	Pounds collected	
Keep the Midlands Beautiful	Riversweep	Richland County							x			Saluda River at Riverbanks Zoo	Pounds collected	
Keep the Midlands Beautiful	Third Saturday Cleanups	Midlands							x			3rd Saturday of each month	Pounds collected	
Gills Creek Watershed Association	Gills Creek Clean-ups	Richland County	x						x		Congaree Riverkeeper	Lower Gills Creek Area	Pounds collected	
Richland County	Public Presentations on the Crane Creek Watershed		x	x	x	x	x	x			Carolina Clear		Post-Survey	
Gills Creek Watershed Association	Public presentations on the Gills Creek Watershed	Richland County	x	x	x	x							Post-Survey	
Gills Creek Watershed Association	Gills Creek Watershed Association Newsletter	Richland County	x									Distributed electronically, monthly		
Gills Creek Watershed Association	Gills Creek Watershed Association Annual Meeting	Richland County	x	x					x					

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Appendix C - Year 3 Education Plan of Work: 2010-2011



Appendix C - Year 3 Education Plan of Work: 2010-2011

Table 6. Education Plan of Work, Year 3, 2010-2011, 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	Diabols	Temperature					Other
General Public																	
Gills Creek Watershed Association	Fundraisers building community support of the Gills Creek Watershed Association	Richland County	x														Funds Raised
Richland County, City of Columbia, Carolina Clear	Summer Celebration of Water Family Festival	Richland County	x	x	x	x	x	x					Conservation District, KMB, Sonoco, GCWA, others	8/28/2010 Riverfront Park			Post-survey
Richland County	Richland County Recycles Day	Richland County			x								Solid Waste	Sandhills REC			
GCWA	Display at Forest Acres National Night	Forest Acres	x										Forest Acres	Trenholm Park			
Richland County	Display at Touch-a-Truck	Richland County															
GCWA	Display at "All Creatures Great and Small" Festival	Richland County	x	x									Forest Lake Presbyterian Church, Carolina Clear	Forest Lake Presbyterian Church			
GCWA, Richland County	Display at Earth Day at the State House	Richland County												SC State House Grounds			
GCWA	Display at Nature Fest	Richland County	x										Congaree National Park	Congaree National Park			
Richland County	Displays at Sparkleberry Country Fair	Richland County	x											Sandhills REC			
GCWA	Display at Rosewood Crawfish Festival	Richland County												Rosewood Neighborhood			
Richland County, Blythewood	Display at Blythefest	Richland County															
Richland County	Display at Black Expo	Richland County															
GCWA	Display at Farmville Festival	Richland County	x	x									Edventure Museum	Edventure Museum, Columbia			
GCWA, Carolina Clear	Display at Rooftop Rhythms Festival	Forest Acres	x	x	x	x	x	x					Forest Acres	Richland Mall			
GCWA	Display at Forest Acres Festival	Forest Acres	x										Richland County, Forest Acres Rotary Club				

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Appendix C - Year 3 Education Plan of Work: 2010-2011



Appendix C - Year 3 Education Plan of Work: 2010-2011

Table 6. Education Plan of Work, Year 3, 2010-2011, 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	Pesticides	Herbicides	Heavy Metals	Sediment	Nutrients	Debris	Temperature				
Youth / K-12 / Teachers																
Carolina Clear	Enviroscape Presentation at Richland County Schools	Richland County	x	x	x	x	x	x	x	x						Worksheet or quiz
Carolina Clear	Rain Barrel Programs for Schools	Richland County	x										Forest Acres			
Gills Creek Watershed Association	Watershed Curriculum Pilot Program	Richland County	x	x	x	x	x	x	x	x			Dent Middle School	Dent Middle School		Post-survey
Carolina Clear	Watershed Presentations for After School Programs	Richland County	x	x	x	x	x	x	x	x			Richland County Recreation Commission	Richland County Recreation Centers		
Carolina Clear	Rain Garden Work Days at schools with rain garden installations	Richland County	x				x						Bookman Road Elementary	Bookman Road Elementary		
Carolina Clear	Green Steps Projects with local schools	Midlands											Green Steps, Keep the Midlands Beautiful			Number of successful project
Carolina Clear	4H2O Pontoon Classroom day camps	Richland County	x	x	x	x	x	x	x	x			4-H Program	June, Lake Murray, Harbison State Forest		Post-survey
Carolina Children's Garden	Carolina Children's Garden Presentations on Water Quality	Richland County	x	x	x	x	x							Carolina Children's Garden at Sandhills REC		
Conservation District	Conservation Station - Stormwater runoff and pollution prevention module	Richland County		x			x	x					Carolina Clear	Sandhills REC		
Richland County	Richland 101 (Kids Day) Activities and information delivered to inform kids and their parents about Stormwater related issues.	Richland County	x											Dutch Square Mall		
Richland County	Public Works Week Kids Day	Richland County	x										Department of Public Works Divisions	Richland Co. Public Works		

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Appendix C - Year 3 Education Plan of Work: 2010-2011

Table 6. Education Plan of Work, Year 3, 2010-2011, Page 4

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	Diabta	Temperature					Other
Professionals: Contractors, Engineers, Developers																	
Carolina Clear	Presentations for the Development Roundtable	Richland County												Richland County			
Richland County	Construction Conference	Richland County															Post-Survey
Clemson University	CEPSCI (Certified Erosion Prevention and Sediment Control Inspector) Training	Richland County				x	x								Ongoing		Exam
Richland County	Internal stormwater management training for Richland County staff														RC Public Works		
Elected and Appointed Officials and High-Level Staff																	
Richland County & Carolina Clear	Richland County's County Council awareness presentation of the importance of Stormwater regulations and general Stormwater projects and programs. (NEMO presentation)	Midlands	x											SC Sea Grant, KMB			Post-Survey
Carolina Clear	Presentation for Blythewood Town Council	Richland County	x	x													
Carolina Clear	Presentation for Forest Acres Town Council	Richland County	x	x													
Carolina Clear	Joint presentations for Lexington and Richland County Councils													Richland & Lexington Counties			
Commercial Citizens																	
Clemson Carolina Clear	Business Recognition Program, with special categories for stormwater retrofits and new low-impact development	Richland County	x	x	x	x	x	x	x					Richland County			Number of businesses recognized
Richland County, Carolina Clear	Display at Green is Good for Business Conference	Midlands	x	x	x				x					Keep the Midlands Beautiful, City of Columbia	Columbia Metropolitan Convention Center		
Clemson Carolina Clear	Partnering for Water Quality presentation to the Chamber of Commerce	Richland County			x	x	x	x						Carolina Clear			
Clemson Carolina Clear	General Stormwater Awareness presentations to Rotary Club	Richland County	x														
Richland County	Pesticides, Herbicides, and Fertilizer (PHF) Conference and Inspection Program	Richland County			x				x								Post-survey
Clemson Carolina Clear	Brochure in Spanish for landscaping businesses and employees.	Richland County	x						x								
Richland County	Distribute brochures at the Business License Bureau	Richland County	x											Carolina Clear			

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Appendix C - Year 3 Education Plan of Work: 2010-2011

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Table 6. Education Plan of Work, Year 3, 2010-2011, Page 5

Lead Service Provider	Activity	Target Geography/ Land Use	Target Pollutant(s)										Participation by other Service Providers	Location and Date Delivered	Number Impacted/ Reached	Assess-ment Type
			General Stormwater Awareness	Bacteria	Toxic Contaminants, petroleum products, pesticides, heavy metals	Sediment	Nutrients	Debris	Temperature	Other						
Homeowners & Homeowner Associations																
Richland County	Storm drain marking, accompanied by Stormwater awareness door hanger.	Richland County	x	x		x	x	x					Carolina Clear	To be completed Summer 2010		
Richland County	Promote storm drain marking already completed by the county through newspapers, newsletters and local channels.		x	x		x	x	x					Clemson Carolina Clear			
RC Master Gardeners Association	Rain garden installations and demonstration workshops	Richland County	x			x								Clemson Sandhills REC		Post-survey
Carolina Clear	Build a Rain Barrel Workshops	Richland County	x		x	x							RC Public Works	Richland Co. Public Works		Post-survey
Soil & Water Conservation District	Rain Barrel Sales with accompanying newsletter articles	Richland County												Ongoing		Number barrels sold
Forest Acres, Richland County	Household Hazardous Waste Hanging Brochures placed on garbage cans	Richland County	x										Carolina Clear			
Richland County	Lawn Mower Exchange	Richland County	x										Keep the Midlands Beautiful, RC Special Services			Number of mowers replaced
Carolina Clear	Carolina Yards & Neighborhoods Recognition Program	Richland County	x			x	x	x								Number of yards recognized
Gills Creek Watershed Association	Presentations to Homeowner Associations on Gills Creek Watershed	Richland County	x													
Richland County	Presentations to Homeowner Associations on Crane Creek Watershed	Richland County	x										Carolina Clear			
Richland County	Richland County Neighborhood Council - include articles in electronic newsletter to HOAs across the county	Richland County		x		x	x	x					Carolina Clear			
Richland County	Neighborhood Planning Conference	Richland County														



Appendix D - 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 D - Telephone Survey



Appendix D - 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 D - 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.

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- **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%).

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- **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 D - Telephone Survey



Appendix E - Websites

Carolina Clear Websites

Richland Countywide Stormwater Consortium - <http://www.clemson.edu/carolinaclear/rcsc>
 Carolina Clear - <http://www.clemson.edu/carolinaclear>

Municipalities

Richland County Stormwater Management - <http://www.richlandonline.com/departments/publicworks/storm.asp>
 City of Forest Acres - <http://www.forestacres.net/>
 Town of Arcadia Lakes - <http://www.arcadialakes.net/index.asp>

Education Partners

BP Barber - <http://www.bpbarber.com/>
 Carolina Children's Garden - <http://www.carolinachildrengarden.org/>
 Carolina Ready-Mix Concrete Association - <http://www.crmca.com/>
 Congaree Riverkeeper - <http://www.congareeriverkeeper.org/>
 East Piedmont Resource Conservation & Development - http://www.sc.nrcs.usda.gov/east_piedmont_rcd.html
 Fuss & O'Neill - <http://www.fando.com/>
 Gills Creek Watershed Association - <http://www.gillscreekwatershed.org/>
 Green Steps Schools - <http://www.greenstepschools.com/>
 Keep the Midlands Beautiful - <http://keepthemidlandsbeautiful.com/>
 Richland County 4-H - <http://www.clemson.edu/extension/4h/>
 Richland County Conservation Commission
 - <http://www.richlandonline.com/departments/conservation/commission/index.asp>
 Richland County Master Gardeners - http://www.scommga.org/richland_county.html
 Richland Soil & Water Conservation District
 - <http://www.richlandonline.com/departments/conservation/conservation.htm>
 Riverbanks Zoo - <http://www.riverbanks.org/>
 Sonoco Recycling - http://www.sonoco.com/sonoco/Services/Recycling/svc_sonoco_recycling.htm
 South Carolina Department of Health & Environmental Control - <http://www.scdhec.gov/index.htm>
 South Carolina Forestry Commission - <http://www.state.sc.us/forest/>
 South Carolina State Museum - <http://www.museum.state.sc.us/>
 Sustainable Midlands - <http://www.sustainablemidlands.org/>
 Town of Blythewood - <http://www.townofblythewoodsc.gov/>
 University of South Carolina Green Quad - <http://www.greenquadcommunity.org>

Appendix E - Websites