



Introduction



BEAUFORT COUNTY STORMWATER UTILITY
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**Stormwater Utility Report
For
Citizens and Stormwater Fee Payers of Beaufort County**

The Beaufort County Stormwater Utility (the Utility) was formed by ordinance in 2001. To mark ten years of service to the citizens of the County, the County Administrator, Gary Kubic, directed a report be developed to inform the citizens of what the Utility had achieved in its first ten years. He further directed that the Utility project reports be applied with agreed-upon procedures so that the citizens could have an independent assessment of the activities that collected over \$50 million for the County and municipalities and directed over \$25 million to improving drainage and protecting our water resources in the unincorporated County.

This report starts out with a history of the Utility's establishment and the direction the Utility has taken in its first ten years. It then presents in continuing sections, all 864 County projects completed by year, and detail reports on the 171 projects that were over \$20,000 in cost. The last section presents the plan to maintain the improvements that have been made as the Utility moves on to address the next challenge of restoring shellfish harvesting impairments in some of our County's waters.

On Behalf of the Stormwater Utility

A handwritten signature in blue ink that reads "Daniel B. Ahern".

Daniel B. Ahern P.E. BCEE
Manager
Beaufort County Stormwater Utility

Stormwater Utility – History and Regulations

What is the Stormwater Utility and What does it do?

Stormwater runoff is generated when precipitation from rain events flows over land or impervious surfaces (paved streets, parking lots, and building rooftops) and does not percolate into the ground or return to the atmosphere. Development in Beaufort County has increased its impervious surface area. Impervious surfaces have three impacts on stormwater runoff:

- The runoff flows quicker off the land
- The runoff accumulates debris, chemicals, and other pollutants
- The amount of runoff increases and more runoff reaches the County's tidal waters

Scientific studies have linked the percentage of impervious surface to the health and water quality of our County's waters. As the percentage of impervious surfaces increases, water quality decreases. The County has adopted goals on the percentage of impervious surface that it will try to maintain in order to protect the County's water resources. When development exceeds these percentages, controls are required to reduce the impact of the stormwater discharges caused by the impervious surface back to an equivalent impervious surface goal percentage. This metric (originally called effective imperviousness) measures how effectively impervious surface is reduced relative to pre-development pervious surface runoff.

The primary method to control stormwater discharges is the use of best management practices (BMPs).

In addition, most stormwater discharges are considered point sources and can require coverage under a federal mandated permit. Currently, Beaufort County is not under these permits and regulatory control is maintained by the South Carolina Department of Health and Environmental Control (SC DHEC). Beaufort County stormwater requirements are more protective than South Carolina requirements and currently supplement the state requirements.

Background on Forming the Stormwater Utility

In the Fall of 1995, SC DHEC closed 500 acres of shellfish harvesting waters in the Broad Creek on Hilton Head Island because of high fecal coliform (bacteria) counts. There were a number of local citizens that took this as a wake-up call and formed a

group now known as the Clean Water Task Force. This group established a dual objective:

- Encourage the clean-up of polluted County waters
- Identify what must be done to prevent additional County waters from becoming polluted

The group spent over a year consulting the best resources in South Carolina and over fifty federal, state, and local officials donated their time in development of a major 1997 report called the *Blueprint for Clean Water*. This report offered specific (over 60) recommendations and a challenge that “if, implemented, will catapult our County into the vanguard of communities that are serious about protecting their natural environment.” There were ten recommendations that they felt merited special attention. One of them was:

“Beaufort County Should Improve Its Stormwater Standards for New Development”

This step challenged Beaufort County in 1997 to adopt a set of new stormwater BMPs that would exceed the current state standards. In 1998, the County responded with the development of a BMP manual that specified credits for practices that would control new development to ‘equivalent’ impervious surfaces that would not impact the County’s waters. Additionally in 1998, the first target pollutant was designated as phosphorus. An anti-degradation goal of ten percent ‘effective/equivalent’ impervious surface was also adopted. This important water quality effort was supplemented in 2003 with controls for the second targeted pollutant, bacteria (fecal coliform). Since bacteria was such a critical pollutant, due to the amount of shellfish harvesting in the County, the decision was made to set a goal of five percent ‘effective/equivalent’ impervious surface for this pollutant. The final improvement in water quality came in 2008 with controls on nitrogen.

Another of the top ten steps was:

“Beaufort County, in Cooperation with the Town of Hilton Head Island and Other Municipalities, Should Establish a Stormwater Utility (or some equivalent institutional capacity) to Inspect, Maintain and Repair Stormwater Management Systems.”

This recommendation led to the forming of the Beaufort County Stormwater Utility (the Utility) in 2001.

Prior to the establishment of the Utility, drainage work was performed by the County’s Public Works Department with the assistance of dedicated stormwater funds like the Del Webb Drainage Fund.

Stormwater Utility – Early Years 2001 to 2006

There were two significant documents that focused on the formation and operation of the Utility. The first was the Beaufort County ordinance forming the Utility, which was enacted on September 10, 2001. The other significant document was the intergovernmental agreement (IGA) between the County and each of the four municipalities (Town of Hilton Head Island, Town of Bluffton, Town of Port Royal, and City of Beaufort) that outlined the relationship and support between the Utility and municipalities. These agreements were signed in September 2001 and were effective for a period of 10 years.

The ordinance established a preliminary fee system and most of the funds collected were directed to correcting known flooding and maintenance issues.

Besides addressing maintenance and repair of the stormwater management systems, about a quarter of the fees were directed to efforts on three special projects:

- The County-Wide Stormwater Management Study
- The Cost of Service Analysis and Rate Study
- Funding of aerial surveys to develop elevation maps

The IGA specified that set portions of funds collected from Utility user fees on properties in the municipalities would fund Utility administration and the listed above special projects. The remainder would be returned to municipalities so they could maintain the stormwater systems within their jurisdictions.

The Rate Study was completed in 2005 and led to the passing of a new and current County Stormwater ordinance on August 22, 2005. Subsequently, the County-Wide Stormwater Management Study was completed in February 2006. This comprehensive study outlined a ten year plan (the Plan) with recommended levels of effort for nine master plan elements:

- Stormwater Control Regulation
- Primary Stormwater Management System Enhancements
- Water Quality Controls for Existing Development
- Water Quality Monitoring
- Annual Maintenance
- Inventory of Secondary Stormwater Management Systems
- Additional Study and Analysis
- Public Information
- Utility Administration

Stormwater Management Plan Implementation – 2007 to Present

After the approval of the Plan by the County and the municipalities, the focus of the Utility was to align budgeted efforts to those recommended by the Plan.

The Utility adopted a vision and mission statement to help guide it in this alignment. It was:

Vision Statement

Efficient Utility Addressing the Stormwater Needs of the County, while Protecting its Water Resources.

Mission Statement

Dedicated to the management, construction, maintenance, protections, control, regulation, use, and enhancement of stormwater systems and programs in Beaufort County in concert with other water resource management programs.

In order to better coordinate implementation of the Stormwater Management Plan, a significant meeting between senior County and municipal staff was held in early 2008. This led to the formation of the Stormwater Implementation Committee (SWIC), which is composed of County and municipal representatives. The SWIC was charged with:

- Developing annual recommendations to better implement the Management Plan
- Coordinating Stormwater activities in the County

The SWIC was later charged with recommending operational alternatives under expected stormwater permits and developing wording on the second round of ten year IGAs that started in 2011.

These efforts were challenged by another significant water use issue in the May River in 2009. Investigating the cause of the closing of 900 acres to shellfish harvesting in the May River headwaters uncovered the fact that the third impact (increased runoff volume) of new impervious surfaces was more significant than originally thought. The Utility learned that the addition of additional freshwater, even if it had its pollutants removed, could have adverse effects on the County's salty tidal water resources. This led to a fresh look at the Utility's control requirements and a series of new requirements were enacted between 2009 and 2011.

In 2009, with concerns on the total volume of stormwater runoff, the County adopted total volume controls on rain events below 1.95 inches. This was the 95th percentile of average rainfall events in a year and met the existing water quality requirements. The County adopted additional controls in 2011 to address impacts from new homes that did not have community wide controls. These Low Impact Development (LID) controls led to the understanding that controlling runoff volume was not additional controls but a better way to protect our water resources in Beaufort County.

This placed Beaufort County “into the vanguard of communities that are serious about protecting their natural environment”, as suggested in the *Blueprint for Clean Water*.

The Utility’s effort in this area has been taken out to state, regional, and national forums and the Utility was asked to present their practices to the Chesapeake Bay Stormwater Training Partnership. The County received the 2012 National Association of Counties (NACo) Achievement Award for its program on Stormwater Runoff Volume Controls.

Utility Looking Ahead

The impact of the *Blueprint for Clean Water* and its local support led to many of its recommendations being implemented. A ten year retrospective of this study created in 2008 by the Water Quality Committee of the Together for Beaufort initiative, determined that over 80% of its recommendations were enacted. This committee also recommended a new list of top ten steps to be considered.

The County now believes that it has adequate protection requirements for future development and will not see additional water quality impairments. This was the prevention side of its efforts. This leaves the large restoration effort of addressing water quality impairments caused from development before water quality and volume controls were required. This was a major focus of the Stormwater Management Plan “*Water Quality Controls in Existing Development*” and the Utility has decided to approach this on a watershed basis. Two additional watersheds (May River is an existing watershed effort), the Battery Creek and the Okatie River, have been selected for a five-year effort to restore and remove current impairments to the designated water uses.

This effort will take many years to achieve and the Utility will be looking at various methods to achieve the goal of reducing impaired waters.

In 2010, the Utility developed its Extent of Service (EOS) and Level of Service (LOS) documents. These were developed with current Utility capabilities in mind. They highlighted that there were some areas of the Utility’s drainage system that could not be maintained because of the Utility’s capacity and because it did not have appropriate

access to some of the drainage systems. Decisions will have to be made concerning these EOS and access efforts.

Another challenge for the Utility will be operation under the expected Stormwater permit now called the MS4 permit (Municipal Separate Small Storm Sewer System). This is expected to take effect in 2014 and will require additional efforts in monitoring construction and illicit discharge inspection.

Addressing these challenges, while maintaining the County's restored drainage system, will be the focus of future Stormwater Utility efforts.

Ordinances and Guidance

Ordinances with Code of Ordinances Municode Chapter

- 2005 SW Utility Ordinance – Chapter 99
- Expected 2012 Form-Based Stormwater Ordinance
- Current Zoning and Development Standards Ordinance – Chapter 106, Article XIII, Division 4

Guidance, Agreements and Other Requirements – Found on Stormwater Web Page at www.bcgov.net/stormwater

- 2006 SW Management Plan
- 2012 BMP Manual
- 2010 Extent of Service (EOS)
- 2010 Level of Service (LOS)
- 2007 Credit and Adjustment Manual
- 1997 Blueprint for Clean Water
- 2011/2012 Utility IGAs
- 2011 Watershed Restoration Program