BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA
Wednesday, August 10, 2016
2:00 p.m.
Executive Conference Room, Administration Building
Beaufort County Government Robert Smalls Complex
100 Ribaut Road, Beaufort, South Carolina
843.255.2805

In accordance with South Carolina Code of Laws, 1976, as amended, Section 30-4-80(d), all local media was duly notified of the time, date, place and agenda of this meeting.

1. CALL TO ORDER – 2:00 p.m.
   A. Approval of Agenda
   B. Approval of Minutes – June 8, 2016 (backup)
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
   A. Utility Update – Eric Larson, P.E. (backup)
   B. Monitoring Update – Eric Larson, P.E. (backup)
   C. Stormwater Implementation Committee Report – Eric Larson, P.E. (backup)
   D. Stormwater Related Projects – Eric Larson, P.E. (backup)
   E. Upcoming Professional Contracts Report – Eric Larson, P.E. (backup)
   F. Regional Coordination – Eric Larson, P.E. (backup)
   G. Municipal Reports – Eric Larson, P.E. (backup)
   H. MS4 Update – Rebecca Baker (backup)
   I. Maintenance Projects Report – David Wilhelm (backup)
   J. Financial Report – Chanel Lewis
5. UNFINISHED BUSINESS
   A. Rate Study Final Report/Update on Municipalities – Tony Maglione, ATM (backup)
6. NEW BUSINESS
   A. Stormwater Ordinance Revision Related to Condos and Submerged/Marsh Properties – Eric Larson (backup)
   B. Recommendation for Two Easements on Creg Green's Property be Abandoned in Exchange for an Alternate Requested Easement – Eric Larson (backup)
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
   A. September 14, 2016 (backup)
9. ADJOURNMENT

The County Channel

Beaufort County Stormwater Management Utility Board (SWMU Board) Meeting Minutes

June 8, 2016 at 2:00 p.m. in Executive Conference Room, Administration Building, Beaufort County Government Robert Smalls Complex, 100 Ribaut Road, Beaufort, South Carolina
Draft Minutes 07/12/2016

Board Members		Ex-Officio Members	
Present	**Absent**	**Present**	**Absent**
Don Smith		Kim Jones	
Allyn Schneider		Andy Kinghorn	
James Fargher		Scott Liggett	
Marc Feinberg		Van Willis	
Patrick Mitchell			
William Bruggeman			
Larry Meisner			

Beaufort County Staff
Eric Larson
David Wilhelm
Rebecca Baker
Patricia Wilson
Carolyn Wallace
Danny Polk
Kevin Pitts
Robert O'Quinn

Visitors
Neil Desai, City of Beaufort
Alan Warren, USCB
Reed Armstrong, Coastal Conservation League
Jill Bolin, Academy Estates
Richard Bolin, Academy Estates
Alice Howard, Beaufort County Council

1. Meeting called to order – Don Smith
- **A.** Agenda – Approved
- **B.** April 27, 2016 Minutes - Approved.

2. Introductions – Completed.

3. Public Comment(s) – Mr. Eric Larson expressed the County's sympathy in the loss of Robert McFee's father (Commander Charles McFee). Mr. Robert McFee is the Director of Engineering and Infrastructure for Beaufort County.

Mr. Richard Bolin stated that he has requested the contract, plans and specifications for the Factory Creek Watershed Regional Detention Basin "Phase I" project and feels he has been ignored. He is using the public forum to further request the specified documents. When the documents are available he would like to be notified and be able to review the documents at the County's office. Mr. Bolin would also like an explanation of why Academy Estates Subdivision is included in the Stormwater Manager's Report in the posted agenda.

Mr. Eric Larson referred to Regional Coordination Item 2 heading of his Stormwater Manager's Report which included Academy Park Subdivision. Mr. Larson said he used the title as a reference and the subdivision is not part of the Factory Creek Watershed Regional Detention Basin "Phase I" project. Mr. Larson also clarified that the County only has draft documents that have not been signed by either party. There are no construction plans to review. Mr. Larson yields

authority to the legal office whether or not draft documents are available through Freedom of Information Act (FIOA). Mr. Larson added that he has been busy responding to emails resulting from tropical storm Bonnie and he apologized for not being able to address all of his emails.

Mr. Larson announced to the board that Mr. Kevin Pitts (the Stormwater Utility Inspector) has resigned and is moving back to his home town in Tennessee to be near family. Mr. Larson and the board thanked Mr. Pitts for his work with the department.

4. Reports – Mr. Eric Larson, Mr. David Wilhelm, and Mrs. Rebecca Baker provided a written report which is included in the posted agenda and can be accessed at: http://www.bcgov.net/departments/Administrative/beaufort-county-council/boards-and-commissions/council-appointed/board-list/stormwater-management-utility-board/agendas/2016/060816.pdf

A. **Utility Update –** Eric Larson
Mr. Larson stated that the Utility Update would be covered under Unfinished Business and New Business so he withheld comment.

B. **Monitoring Update –** Eric Larson
Mr. Larson referred to the update provided by Dr. Alan Warren and Lab Manager Danielle Mickel. The board had no questions for Dr. Warren.

C. **Stormwater Implementation Committee (SWIC) Report –** Eric Larson
The SWIC met on June 1, 2016. Shakhlan Garane and Neshia Wright with DHEC addressed the group with a presentation summarizing the MS4 program and what is expected during an annual report and audit.

D. **Stormwater Related Projects** – Eric Larson
Okatie West / SC 170 Widening Retrofit Land Purchase – Mr. Paul Moore and Mr. Eric Larson were interviewed by the Sun City TV channel for a short story promoting the public meeting scheduled June 16th. The monthly Sun City magazine also ran an article about the project.

E. **Professional Contracts Report –** Eric Larson
Mr. Larson referred to his Stormwater Report and stated that select items would be covered later under New Business.

F. **Regional Coordination**
Mr. Larson stated that the Factory Creek Watershed Regional Detention Basin "Phase II" contract has been signed and the County is waiting on Carolina Engineering to submit a proposal for design and permitting. Mr. Larson discussed how tropical storms Bonnie and Colin caused flooding in Mint Farms subdivision and McTeer Drive and actions the County is taking to try to alleviate these issues. This is mentioned in an email status report to Mr. Gary Kubic. (Backup)

G. **Municipal Reports –** Eric Larson
Town of Hilton Head Island - Mr. Larson discussed part of Mr. Bryan McIlwee's (Assistant Engineer for the Town of Hilton Head Island) report. Beaufort County Stormwater crews performed two recent projects for the Town, Clifford Miller/Gumtree Road roadside maintenance and Arrow Road roadside maintenance. The Town staff was very happy with the work and level of responsiveness by David Wilhelm and County staff.
Town of Bluffton – Mr. Larson said the Town of Bluffton submitted a detailed report which is included in the posted agenda.

City of Beaufort – Mr. Larson reported on projects the County partners with the City and Mr. Neil Desai added that the Battery Creek Pond Funded by an EPA 319 Grant project should get wrapped up by the end of the week. The Hamar Road project has had delays due to storm issues.

Town of Port Royal - Mr. Van Willis (Town Manager) reported that the Town is working on a revised scope for Cypress Wetlands and should have a report by the end of August.

H. **Municipal Separate Storm Sewer System (MS4 Update) –** Rebecca Baker

Mrs. Rebecca Baker discussed results of a Stormwater Survey and requested the board's help to encourage others to get the word out. Mrs. Baker also discussed reporting on illicit discharge and requested others help report incidences. On July 1, 2016 the County 311 phone application will be available for public use.

I. **Maintenance Projects Report** – David Wilhelm

Mr. David Wilhem reported on the Highway 278 Retrofit Pond 50 which is the first of four ponds to be built to control runoff from Highway 278. The pond took about 1 year to complete and the total cost was $117,642.30. The second pond off Barrel Landing Road is about 95 percent complete. Stormwater crews are currently working on a third pond off Barrel Landing Road and the fourth pond in Berkley Hall has not been started. Mr. Wilhelm hopes to have all ponds completed in about a month and a half. Another major project Mr. Wilhelm mentioned is Huspah Drive which began in June of 2015 and was completed in November 2015. The total cost was $74,433.39. Mr. Wilhelm also reported on two reimbursable projects. One for the Town of Hilton Head Island and the other for the Technical College of the Lowcountry.

5. Unfinished Business –

A. *Rate Study Final Report/Update on Municipalities* – Mr. Larson reported that the County adopted option E of the rate study in 2015. The City of Beaufort and the Town of Port Royal adopted option E in 2016 but they are not increasing rates. The Towns of Hilton Head and Bluffton will be discussing action at Town and government meetings in the month of June.

6. New Business –

A. *Extent of Service (EOS) and Level of Service (LOS) Updates* – Mr. Larson discussed the need to update the EOS and LOS as a result of the newly adopted rate structure and changes to the County Ordinance. The draft EOS reflects an increase in revenue to help private infrastructure systems that affect six or more properties. Mr. Don Smith had concerns about increased costs of covering private infrastructure systems. Mr. Larson clarified that requests have a more formal process for current practices of which the Stormwater Manager ultimately makes the final decision. Concerns about lawsuits were discussed. The board made a motion and approved the 2016 revision for the Level of Service and Extent of Service policies with a unanimous vote of 7:0.

B. *Intergovernmental Agreements (IGA) Revisions* – Mr. Larson discussed the IGA revisions to include all the newly adopted rate study option E updates. The four municipalities reviewed the document and agree with it. The municipalities were also included in the Unanimous vote (11:0) to approve the 2016 revisions of the Stormwater Utility Intergovernmental Agreements.

C. *Public Education Fiscal Year 2017 (FY17) Contract* – Mr. Larson stated that the IGA outlines the cost share agreement with the municipalities. The contract with Carolina Clear (part of Clemson University) is a cost share with all four municipalities to provide bench mark public

education and outreach resources to the public. The contract with Beaufort Soil and Water Conservation District expires June 30,2016. Mr. Don Smith would like to see more emphasis on soil affects to local marine organisms. A motion was made and unanimously approved (7:0) to recommend approval of the Stormwater Public Education Contract with Clemson University for Fiscal Year 2017 (FY17) to Beaufort County's Natural Resources Committee.

D. *Tax Run and Billing Assistance Tax Year 2016 (TY16) Contract* – Mr. Larson explained that this contract continues Applied Technology and Management's (ATM's) support with billing assistance. Stormwater staff needs continued rate study model support to implement the tax run for FY17. The Board unanimously (7:0) approved to recommend the Tax Run and Billing Assistance contract with ATM for FY17 to the County Administrator.

E. *Cost Share Memorandums of Agreement (MOA) for Fiscal Year 2017 (FY17*) – Mr. Larson discussed the cost share with the Town of Port Royal and the City of Beaufort for monitoring North of the Broad River. Mr. Larson added that National Pollutant Discharge Elimination System (NPDES) permit wording was removed from the Town and the City documents. Other cost shares are between all four municipalities. The board voted unanimously (7:0) to approve the cost share memorandum of agreements for Public Education, Tax Run and Billing Assistance and Monitoring for FY17.

F. *Announcement of Public Meeting for Management Plan Update, Best Management Practices (BMP) Manual, and Stormwater Ordinance Revision* – Mr. Larson discussed the Management Plan which is being called the Implementation Guide. Public meetings are being held to give the public an opportunity to voice areas of concern. The draft BMP Manual is available for review at the public libraries and online at http://www.bcgov.net/departments/Engineering-and-Infrastructure/stormwater-management/Whats-New.php. ATM provided a Technical Memorandum as a guide to changes in the BMP manual (Backup). The Stormwater Ordinance Revision is also available for review online.

7. Public Comment(s) – None.

8. Next Meeting Agenda – Approved and included in posted agenda.

9. Meeting Adjourned

From: Kubic, Gary
Sent: Tuesday, June 7, 2016 8:47 AM
To: Larson, Eric; Wilhelm, David
Cc: Gruber, Joshua; #COUNCIL; McFee, Robert
Subject: RE: Storm damage assessment

Eric and company:

Once again, I acknowledge our staff efforts. Please relate my feelings about the team's good work to all…gkubic

Gary Kubic
Beaufort County Administrator
Office: 843.255.2026
Mobile: 843.812.7605
Fax: 843.255.9403
Email: gkubic@bcgov.net

100 Ribaut Road
P.O. Drawer 1228
Beaufort, SC 29901

From: Larson, Eric
Sent: Tuesday, June 7, 2016 7:34 AM
To: Kubic, Gary; Wilhelm, David
Cc: Gruber, Joshua; #COUNCIL; McFee, Robert
Subject: RE: Storm damage assessment

Thanks.

I'll add a few updates on ongoing problems that come up every time it rains.

1) McTeer Drive at Coffin Point – We have a ditch and road pipe that needs major cleaning. I have an engineering firm drawing up plans due to the complexity of the problem. Unfortunately, we are experiencing problems with easement acquisitions. Seems those needing help are unwilling to provide the access we need.
2) Salem Dr. East – A non-functioning ditch due to past filling, siltation, etc. We are struggling to get the needed easements from property owners. We are currently negotiating with several of them.
3) Mint Farms – Spearmint Circle – the entire subdivision lacks needed ditches and pipes in some places, poorly constructed in others. The solution is too complex and costly for O&M. I am planning to address this with the Masterplan update but the schedule isn't agreeable to a few residents.
4) Rose Hill S/D Wood Eden – Private problem, but the resident cannot get POA to react and continues to push the County to intervene.
5) H. E. McCracken Circle – Dave noted this. We have studied the problem several times with no luck in finding a drainage solution. I believe road reconstruction is the answer and intend to pursue that in the near future.
6) Bluffton Park – Pin Oak – Again, a street that makes the News every time it rains. The problem is that the road is County, subdivision is in the Town of Bluffton, and the drainage system off of ROW is privately maintained by the POA. We are confident the County portion is functioning but downstream system is questionable. The solution is going to be a joint effort with the Town and POA.

Thanks.

Eric W Larson
Director of Environmental Engineering

From: Kubic, Gary
Sent: Tuesday, June 7, 2016 7:06 AM
To: Wilhelm, David
Cc: Gruber, Joshua; #COUNCIL; Larson, Eric
Subject: Re: Storm damage assessment

Please advise staff of my appreciation for their efforts last night and today.

I also want to thank you and Eric for your leadership.

gkubic

Get Outlook for iOS

From: Kubic, Gary <gkubic@bcgov.net>
Sent: Tuesday, June 7, 2016 7:02 AM
Subject: Re: Storm damage assessment

To: Wilhelm, David <dwilhelm@bcgov.net>
Cc: #COUNCIL <council@bcgov.net>, Larson, Eric <elarson@bcgov.net>, Gruber, Joshua <jgruber@bcgov.net>
Please advise status of my appreciation for their efforts last night and today.

I also want to thank you and Eric for your leadership.

gkubic

Get Outlook for iOS

On Tue, Jun 7, 2016 at 6:43 AM -0400, "Wilhelm, David" <dwilhelm@bcgov.net> wrote:
It was very quiet last night and so far this morning. I am not aware of any major problems associated with tropical storm Colin. I was out last night until dark and again pre-dawn this morning for about an hour checking the roads. The roadside ditches are full and there are a lot of areas with puddles but nothing that would cause any problems for drivers. The only road closure I'm aware of was McCracken Circle. Bluffton PD closed a portion of this road due to high water. The barricades were still up this morning. Other than that, we had two calls for County owned dirt roads north of the Broad (Quiet Cove and Paige Point Landing). Both had wash-outs around outfall pipes. Our crews placed cones and barricades around the failed areas. The roads were still passable. We will begin repairs as soon as the weather's fit. The only call south of the Broad was from a homeowner on Thomas Lawton. I met with her last night. Our stormwater crew will clean out her roadside ditch this week. I looked at all of the other areas that typically flood during heavy rain events. Bluffton Park looked fine. No problems on Pin Oak or at McGarvey's Corner.

I'm sure we'll be getting calls throughout the day making us aware of localized flooding or problems with individual homeowners. We'll address each complaint as soon as possible. I'll let you know if we get any calls that are out of the ordinary or present a major issue.

David M. Wilhelm, P.E.
Director of Public Works
120 Shanklin Road
Beaufort, SC 29906
843-255-2733 (office)
843-986-4301 (mobile)
dwilhelm@bcgov.net

APPLIED TECHNOLOGY & MANAGEMENT

P.O. BOX 20336
CHARLESTON, SC 29413-0336
TEL: 843-414-1040
FAX: 843-414-0155

www.appliedtm.com

TECHNICAL MEMORANDUM

TO: Eric Larson, Director of Environmental Engineering, Beaufort County, SC
FROM: Joseph A. Mina, P.E.
DATE: May 16, 2016
RE: Beaufort County, SC Stormwater Services Contract, Task Order Number 7, Sub Task #1
AND
Beaufort County, SC Contract for the 2015 Stormwater Management Implementation, Dated December, 2015, Task Seven

Recommendations for Updates/Improvements to Beaufort County 2012 BMP Manual and Key Elements of New Stormwater Management Ordinance

ATM has performed a review of the existing 2012 BMP Manual ("Manual") and created this list of recommendations for updates/improvements to the Manual, and recommended elements for inclusion in the new Stormwater Management Ordinance ("SWM Ordinance").

BMP Manual Recommendations:

1. There are numerous sections that contain educational, and theory based information which, while valuable, contribute to the manual being unwieldy, and confusing. We recommend that these sections be removed, and if necessary, be included in an appendix.
2. Overall, the manual is confusing regarding the difference between Post Construction, and during construction BMP's. This needs to be clarified in a revised document.
3. There are duplicate requirements for Pipe and Culvert sizing. It is recommended that pipes and culverts be addressed in a specific section, and combined to clarify design requirements. It is recommended that for normal street drainage pipes, the 25 year storm be utilized.
4. Clarification on drainage calculations regarding gutter flow, and other SCDOT requirements should be included.
5. It is recommended that the manual more clearly specify the requirement for meeting Volume, rate and Water Quality. To that effect, it is recommended that specific requirements for requiring that the post development storm meet pre development storm for Design Storms (2,10,25,50 and 100), and that clear guidance on water quality be included. The current worksheets are not clear, and confusing.
6. It is recommended that specific Fact Sheets (currently in discussion and under development with the County Staff) be utilized to clearly state design uses and requirements along with Operation and Maintenance requirements ("O&M").
7. Currently, there is no enforcement device for long term recording of any O&M agreement. This should be clarified by the instatement of Recoded agreement with the County that

memorializes this, and allows the agreement to run with the land. Specific requirements as to who and how often maintenance is performed can be negotiated as part of the approvals process. In general, this should be the land owner, or any HOA or Owners Association.

8. Overall, there is a large amount of "rule of thumb" and general information. It is recommended that the process be streamlined to include simple requirements to show calculations of Hydrology and Hydraulics, as well as routings of the designed facilities to prove compliance.
9. It is recommended that a specific requirement for Erosion and Sediment Control Plans (for during Construction) and Post Construction Stormwater Management Plans (for long term/permanent facilities) be implemented.

Overall, the best way to implement all of these items is to create a new document for the BMP Manual, and a companion to the new SWM Ordinance. It is recommended that the County do the following:

1. Create a stand alone SWM Ordinance that clearly states the requirements intended, and that references the BMP Manual for specific Technical requirements and methodology. Numerous other jurisdictions in the area have similar ordinances that would be a good base for this new Ordinance.
2. Create a BMP Manual by using existing documents from other jurisdictions. Local nearby municipalities and counties have similar documents with stronger requirements than the existing 2012 manual. It is recommended that one or two of these be used as a benchmark, and specific requirements be adapted to Beaufort County needs and desires.

Respectfully Submitted,
APPLIED TECHNOLOGY & MANAGEMENT, INC.

Joseph A. Mina, P.E.
Senior Engineer

BEAUFORT COUNTY
STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Utility Update

1. Utility Rate Study – All 5 jurisdictions have taken action on the 2015 Rate study. ATM will be presenting the final countywide rate study document under Old Business.
2. TY 15 Billing Appeals – All received appeals to date have been processed and responses sent back to the property owners.
3. Credit and On-Lot Exemption Annual Reports – Staff has been reviewing the required annual reports as they are received.
4. Tax Run for TY 16 – Database development is underway. ATM is assisting with the work as well as providing training in the new procedures so that we can perform these tasks independently in future years.
5. Submerged Properties, Marshlands, and Condominiums Rate Structure and Billing – We have been dealing with three types of problems with collections of SWU fees based on the new rate structure.
    a) Submerged Properties – These accounts do not get a tax bill due to their nature of being lost to erosion. However, the new billing structure sent a bill for administrative fees and gross area charges. We have been manually making adjustments as people call in. One of the issues is that the owners are unaware they even still own the property, thinking it is lost to the sea and owned by the government. Therefore, the County is creating a Trust that can accept ownership of these lots via Quit Claim. Fees will be credited based on the new Credit Manual or waived by the County once the property is transferred.
    b) Marshland – The revision to the Credit Manual solved the issue of billing gross area to these parcels. However, administrative fees still remain an issue.
    c) Condominiums - Condos are located on "master account" lots. These lots are shared by the owners. Taxes on the master account are zero with all the value on the condo unit. However, the new rate structure began charging the master account an Administrative fee and Gross Area charge. We have found that many master accounts were never properly transferred to a POA or entity that can receive the bill and pay the fees.

    As a result of these issues, we are proposing a minor change to the Stormwater

Ordinance to handle billing of condos separately and to exempt fees on Marsh and Submerged properties. See New Business.

6. Proposed "Minor" Reorganization of Public Works and Environmental Engineering – To reflect a movement towards cross-discipline workload sharing in Public Works, Dave Wilhelm has proposed a restructuring of the three crews within Public Works. At the same time, I am taking the opportunity to "re-brand" the Environmental Engineering Division to make it more inclusive of all the departments under my direction. In the near future, "Environmental Engineering" will change to "Land Management". No other changes to stormwater department are proposed.
7. Stormwater Foreman Conrad Alston – Conrad has deployed on a 12 month military reserve mission. We wish him luck and safety. We are internally interviewing interested crew members for a temporary promotion.

BEAUFORT COUNTY
STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Monitoring Update

1. Lab Update (From Dr. Alan Warren and Lab Manager Danielle Mickel) – No information was available at the time of this report.
2. Monitoring Plan Development – See MS4 update report.

BEAUFORT COUNTY
STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Stormwater Implementation Committee (SWIC) Report

1. The SWIC met on August 3, 2016. See MS4 update report.

BEAUFORT COUNTY
STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Stormwater Related Projects

1. US 278 Retrofit Ponds ($356,000 Budget) - Excavation of the third pond continues. Clearing on the fourth pond is ongoing. We have experienced delays due to weather and high priority repairs elsewhere. However, work is projected to be complete by November.
2. Okatie West / SC 170 Widening Retrofit (Design and Construction = $915,000 Budget) – Design work is ongoing. Nothing new to report.
3. SC 170 Widening Pond #8 project (Design and Construction = $630,840) – Nothing new to report.
4. Easements – Staff is working on numerous easement requests. Significant locations are Salem Dr. East, McTeer Drive, Leo Green Road, Young Circle, Roseida / Glaze, and Gadwell Dr. East. The Leo Green Road project will result in the need to abandon an existing easement, which will be considered under New Business.
5. Bluffton Parkway 5A "Flyover" project – Several Stormwater and Public Works staff attended the joint final inspection of the project prior to opening it to traffic. The project has several innovative BMPs on the roadway and bridge to capture and pretreat runoff before discharging it. It is one of the first projects we've done with this type of manufactured BMP on it.

BEAUFORT COUNTY
STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Professional Contracts Report

1. Stormwater Management Plan (Master Plan) Update – ($475,000 Budget; $239,542 County portion) – Work continues. See notes in MS4 Update.
2. Mint Farm Basin B Modification – ($8,000 Budget) – Design is complete. DHEC permits are pending. Permit comments are being addressed.
3. SC 170 Widening Drainage – ($17,500 Budget with 50% of funding from the Stormwater Department) - The County Administrator has retained the services of a third party engineering firm to review the ongoing issues with the road construction and associated drainage on a portion of the road adjacent to the Buckwalter Crossings development. Their scope is to interview all parties involved in the design, construction and oversight, as well as the adjacent property owner, and offer an opinion to resolve the issues. The report is due in 30 days.

BEAUFORT COUNTY
STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Regional Coordination

1. Buckingham Plantation Drive Innovation District Conceptual Design Study ($25,000 Budget – SWU Portion) – No update to report.
2. Factory Creek Watershed Regional Detention Basin "Phase I" & Academy Park Subdivision (cost is pending) – The County is waiting on the Developer to sign the approved agreement.
3. Factory Creek Watershed Regional Detention Basin "Phase II" (Design Cost = $63,390, Tree Mitigation Cost is pending, Construction Cost by the Developer) – The contract for design and construction oversight has been signed. "Stage 1" or the project has begun. This section was previously permitted by the property owner. Future "stages" will begin construction after the design is complete and permitted.
4. Horne Development at Okatie Center in Jasper County – Nothing new to report.
5. Hilton Head National Redevelopment – The property owner has submitted a rezoning and redevelopment plan to Planning and Zoning for consideration. I am working with Planning staff to review drainage and proactively address any concerns.

BEAUFORT COUNTY
STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Municipal Reports

1. Town of Hilton Head Island (From Bryan McIlwee, Asst. Town Engineer for Stormwater)
   i. Town of Hilton Head staff has developed a map-based web application to track service requests and any resulting projects. It will be presented during the Board meeting.
   ii. No further information was available at the time of this report.

2. Town of Bluffton (From Kim Jones, Stormwater Manager)
   Stoney Creek Wetlands Restoration: Data Collection & Analysis Phase
   - Following receipt of the draft water budget including hydrology and hydraulics reports on 4/1/16, data collection in support of developing design alternatives was extended due to above average rainfall over the winter.
   - Data collection continued for approximately 2 months into the "dry" season to measure the effects on the water table. This activity is in support of developing preliminary conceptual designs for property owner review/negotiations.
   - **Next Steps:**
     - Final Summary Memo including conceptual design options was received July 5, 2016 and is in Staff review for final edits.

   319 Grant Phase 2 (Pine Ridge): Construction Phase
   - Substantial completion inspection occurred July 27, 2016 with punch list items to be completed by first week of August.
   - Staff submitted a 319 Grant amendment request to extend the grant deadline to January, 30 2017 and reallocate unspent funds. If approved by SCDHEC, the remaining 319 Grant Phase 2 funds will be reallocated to purchase engineered bacteria removal media filter socks to be installed in the wetland ditch downstream from the New Riverside Pond to maintain bacteria removal efficiency, and to install littoral shelf plantings within ponds in the Pine Ridge Community.
   - **Next Steps:**
     - Contractor completes punch list items.
     - Receive grant extension to January 30, 2017 and work plan approval from SCDHEC.

319 Grant Phase 3 (May River Preserve Pond):

- SCDHEC notified staff that following several minor work plan clarifications, the grant of $231,350 will be awarded.
- **Next Steps:**
  - Execute grant contract with SCDHEC by August 31, 2016.
  - Obtain easement for access, construction and maintenance from property owner.

Okatie 319 Grant (Buckwalter School Campus Pond Retrofit):

- SCDHEC notified staff that project was not awarded, but with more supporting data, the application could be re-submitted in the future.
- **Next Steps:**
  - Remove from Town's FY17 CIP program and allocate funds to support May River Preserve Pond Project and expansion of Pine Ridge Project.
  - Collect supporting water quality data from Pine Ridge project to evaluate project efficacy and consider re-submitting a grant application for FY18 or FY19.

Stormwater Utility Management Plan Update

- Beaufort County is the managing partner for this county-wide stormwater master plan update by Applied Technology & Management.
- A series of Public Meetings was held across the County to gather input for the Management Plan Update. The Bluffton meeting was held on Wednesday, June 22, 2016.
- Following public input, Staff is investigating with ATM if the May River Watershed Action Plan water quality model can be completed as part of the Management Plan Update.
- **Next Steps:**
  - Contractor is to provide alternatives and cost-estimates to complete the water quality model in August.

Watershed Management Division Activities:

- In support of the Development Review process staff performed:
  - 27 Development Plan Reviews,
  - 4 Development Surety Reviews,
  - 17 Certificate of Construction Compliance Inspections,
  - 4 Pre-Construction meetings,
  - 3 Pre-Clearing inspection, and
  - 3 Post-Construction BMP.
- **May Data Collection –**
  - Collected data from 4 monitoring stations at Niver Property.
  - Collected data from 3 monitoring stations at Pine Ridge.
  - 34 in stream flow/velocity measurements collected.
- May River Watershed Action Plan Advisory Committee held quarterly meeting. Special meeting to be scheduled in August to discuss a draft Sewer Connection Policy in support of a Sewer Connection Program, funded at $200,000 for FY2017.
- Staff is preparing for upcoming Beach Sweep/River Sweep on September 17th.

3. City of Beaufort (From Neil Desai, Asst. Public Works Director)
    i. Battery Creek Pond Funded by an EPA 319 Grant ($132,609 Budget – County Portion) – Project is progressing nicely. Approximately 50% complete with the major earthwork in the pond. Work continues. A Public meeting will be held August 25, 2016 to meet grant requirements for education. (See attached announcement)
    ii. No further information was available at the time of this report.

4. Town of Port Royal (From Van Willis, Town Manager)
    i. No information was available at the time of this report.

July 21, 2016

Public Meeting for Beaufort County Stormwater Projects August 25

Beaufort County will be actively improving and protecting water quality through several projects happening in your area. Following priorities and recommendations of the Battery Creek Watershed Management Plan, the Beaufort County Stormwater Department and the City of Beaufort Public Works Department will collaborate to minimize bacteria discharging into local waterways by expanding stormwater treatment practices and improving infrastructure. This project is important for our region because it seeks to protect recreational waters and keep shellfish beds open and safe. These improvements are made more impactful by community support and participation. To learn how this project will affect Beaufort County and how to be an active steward in further protecting water quality and our quality of life in the Lowcountry, residents are invited to attend a public meeting on Thursday, August 25, 2016, from 6 p.m. to 8 p.m. at the City of Beaufort Council Chambers located at 1911 Boundary Street in Beaufort. For more information, call the Beaufort County Stormwater Department at 843-255-2805.

Photo Credit: Josh Whiteside

BEAUFORT COUNTY STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478

August 10, 2016

Stormwater Manager's Report for the Stormwater Utility Board Meeting

MS4 Update

1. Management Plan Update (and Monitoring update) – ATM presented the proposed monitoring hot spots to the SWIC group on 8/3/16. The map below is the proposed hot spots based on 2006 and 2009 land use data. We are currently uploading the 2016 land use layer into the model. The hots spots noted on the map may change based on the results of the 2016 data. ATM will be presenting the final monitoring results at the 9/7/16 SWIC meeting. Hot Spot Maps Backup

2. Plan Review – 15 plans reviewed in June and July.

PROJECT NAME	SRT REVIEW DATE	REVIEW TYPE	RESULTS
BFG Communications	7/20/2016	Conceptual	Approved w conditions Provide original drainage, ditch on East side, show original PUD on site plan, remove wall separation to only one unit.
Coffin Point Septic Tank Waiver	7/20/2016	Waiver	Approved
Nicholas Septic Tank waiver	7/20/2016	Waiver	Approved
USCB Campus Center	7/20/2016	Conceptual	Approved with conditions - Need drainage plan, limit left turn at New River per traffic study.
Sea Miles Peadtric	7/20/2016	Final	Deferred - Ditch on W side of property, reroute roof drains, revise drainage calculations.
Kitties Crossing Lot 4	7/13/2016	Conceptual	Denied. Need SCDOT Approval, building, buffer, foundation, side walk, parking study, need contours, road side ditch elevations.
Church of the Psalms	7/13/2016	Final	Approved with Conditions. Plant back 40 trees
Beaufort County Animal Services 170	7/6/2016	Conceptual	Approved w/conditions- Access needs additional review. Northside connection.
Deer Point Fripp Island Lot 955	7/6/2016	Waiver	Approved with conditions.
Harbor Island Lot 16,17,18,22	7/6/2016	Bulkhead	Approved w/conditions
Bermuda Bluff Lot 43 Bulk Head	6/29/2016	Bulk	Approved
Church of the Mission Cross	6/29/2016	Final	Approved
BJWSA Operations Chelsea Plant	6/29/2016	Amendment	Approved with Conditions.
USCB Student Housing	6/22/2016	Conceptual	Approved with Conditions Need traffic study.
Berkley Hall/Lot 45 Bulk Head	6/22/2016	Final	Approved

3. Inspection summary since last Board meeting (from Danny Polk, Superintendent)
   Number of active permits = 29
   Number of inspections performed = 51
   Number of drainage related complaints investigated = 21

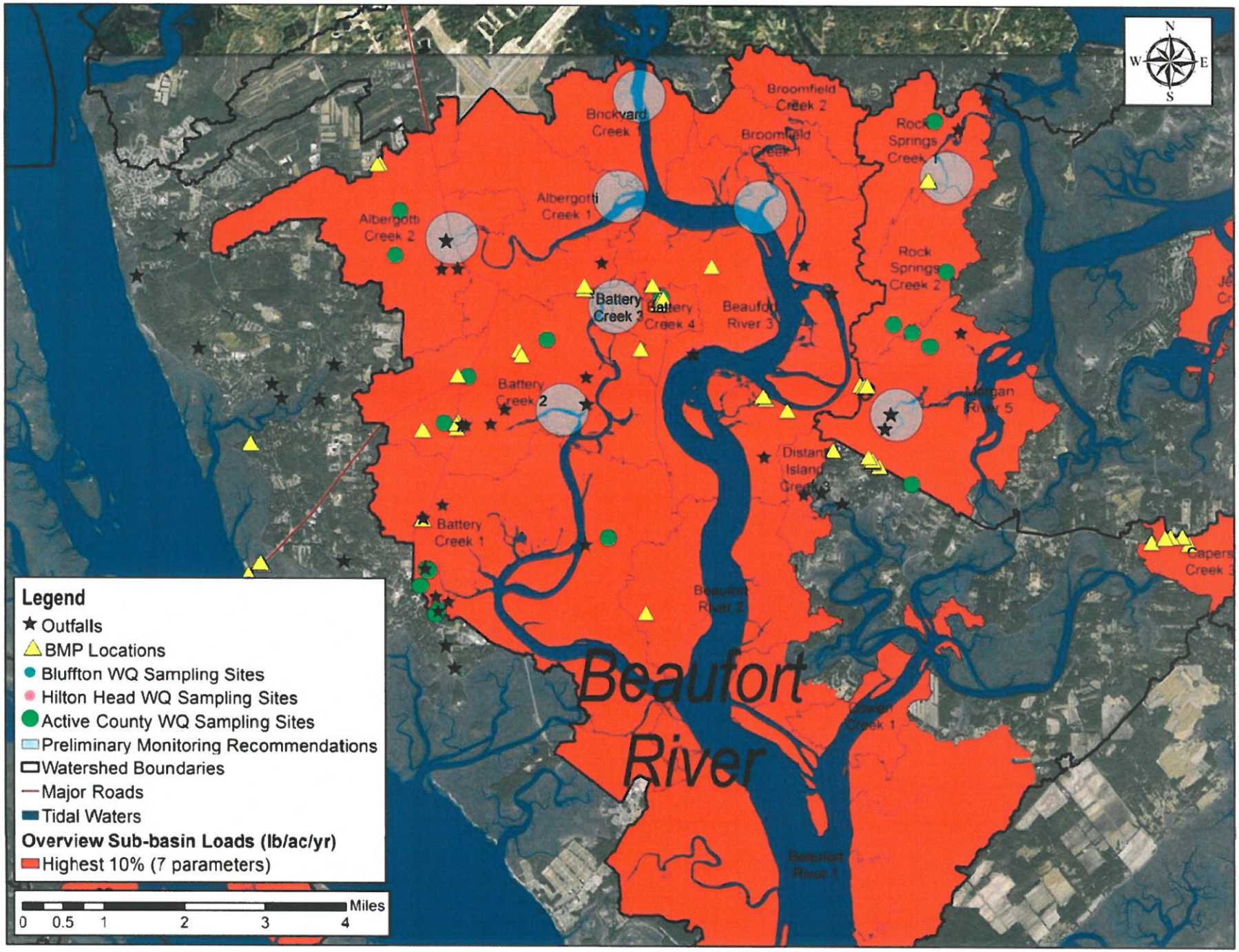
4. Public Education –
   Clemson University Extension Service's Carolina Clear MOA was approved and is off to a good start. A meeting was held with the MS4 Public Education subcommittee in July to begin the planning process of the education program. There is a strategic planning meeting scheduled for September to discuss what the needs of the community our based on the survey and staff input. 311 App is schedule to be launched in the middle August.

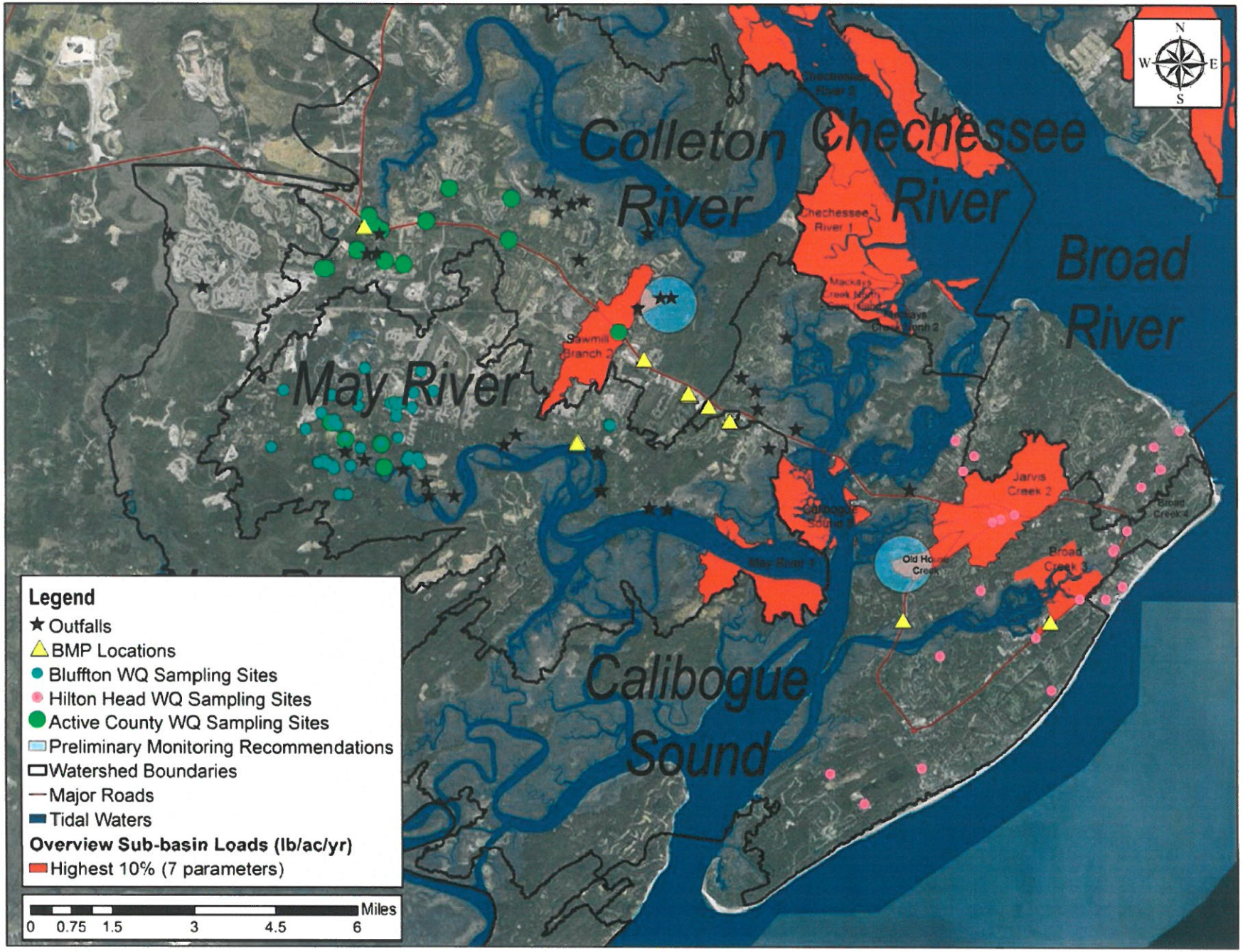
   I would like to thank Beaufort, Soil, Water, and Conservation District for their hard work and efforts helping the County meet their Education requirement.

5. BMP Manual – Manual was presented during a series of public meetings at four different locations in Beaufort County last month. We had 20 comments which are being addressed in the next revision. On 8/31/16 we will be presenting the manual to Planning staff and local Engineers to receive their comments and suggestions. We are currently at 80% complete and we are schedule to present the final version at the SWUB 9/14/16. In addition, we are almost complete with the setup of the MUNIS permitting software for permits and inspections.

6. MS4 Annual report – Beaufort Soil and Water Conservation District submitted a report for FY 16. This report will be added to the annual report submitted to DHEC after the first permit year ends in December.

7. SWIC – Draft Minutes of August 3, 2016 Meeting (Backup)


Legend
Outfalls
BMP Locations
Bluffton WQ Sampling Sites
Hilton Head WQ Sampling Sites
Active County WQ Sampling Sites
Preliminary Monitoring Recommendations
Watershed Boundaries
Major Roads
Tidal Waters
Overview Sub-basin Loads (lb/ac/yr)
Highest 10% (7 parameters)
0 0.5 1 2 3 4 Miles
N
W
E
S
Beaufort River
Brickyard Creek
Broomfield Creek 2
Broomfield Creek 1
Rock Springs Creek 1
Albergotti Creek 1
Albergotti Creek 2
Rock Springs Creek 2
Battery Creek 3
Battery Creek 4
Beaufort River 3
Battery Creek 2
Morgan River 5
Distant Island Creek 3
Battery Creek 1
Beaufort River 2
Capers Creek 3
Beaufort River 1


Colleton River
Chechessee River
Broad River
May River
Calibogue Sound
Sawmill Branch 2
Chechessee River 1
Jarvis Creek 2
Broad Creek 3
Broad Creek 4
May River 1
N
W
E
S
Legend
Outfalls
BMP Locations
Bluffton WQ Sampling Sites
Hilton Head WQ Sampling Sites
Active County WQ Sampling Sites
Preliminary Monitoring Recommendations
Watershed Boundaries
Major Roads
Tidal Waters
Overview Sub-basin Loads (lb/ac/yr)
Highest 10% (7 parameters)
Miles
0 0.75 1.5 3 4.5 6

DRAFT Minutes
SWIC
August 3, 2016, pm at BJWSA Community Room, Okatie, SC

Attendees:	Eric Larson, Bryan McIllwee, Kim Jones, Rebecca Baker, Alan Warren, Bob Burleson, Beth Lewis, Sally Krebs, Danny Polk, Robbie O'Quinn, Tony Maglione.

1. 1:30 pm meeting - Call to order
2. Approval of June 1, 2016 meeting minutes - Approved by common consent.
3. Public Education
    a. Strategic Plan session - To be scheduled soon.
    b. N4CW campaign - Conference call with Katie at end of meeting.
    c. Billing for FY 16 - Sent out to all.
    d. Subcommittee report - None.
4. Management Plan Status
    a. Public Meetings - Results. - Larson noted attendance varied by location. Summary of comments will be in the masterplan document.
    b. Billings for FY 16 - sent out to all.
    c. Report on Monitoring Recommendations (Bob) - Bob presented an analysis of land use changes, projected pollutant loadings based on land use, and recommendations of monitoring locations and parameters. The report is draft and will be finalized when new land use analysis data is received.
        i. Everyone asked to send comments back to ATM on presentation in two weeks. New data needs within a month.
5. Rate Study
    a. Status on County, Towns, & City Rate Studies
        i. Final comments done? - Yes. To be sent to the SWUB for next week's meeting.
        ii. Final report to SWUB for August 10. FYI only presentation. No actions needed for each jurisdiction.
    b. Changes to billing rate structure for Condos, Submerged properties - Larson explained a few issues about these classes that came up during TY 15. An ordinance revision is in works and changes will be made for TY 16.
6. Utility Management Budget Status
    a. Mgt. Fee Approvals - County has everyone's letter.
    b. Cost Share MOAs for FY 17
        i. Pub Ed - County has all signed except CoB.
        ii. Rate structure implementation - County has all signed except CoB.
        iii. Monitoring NoBR - County has all signed except CoB.
7. IGA Update - County has all signed except CoB.
8. MS4
    a. Subcommittee report - None.

b. Annual report status - Larson noted BSWCD submitted a report for FY 16.

9. Monitoring
    a. Subcommittee report - No report.
    b. Continued discussion on monitoring plan development - See 4c above.
    c. FY 16 billings - sent out to all.
10. Reports by each jurisdiction
    a. BC
        i. BMP Manual revisions and timeline for completion - Larson noted a second draft will be out done. Needs all comments prior to end of August so that it can be finalized by Sept. 7th. If you reference the BMP Manual in your code, please make sure you are comfortable with the language.
        ii. Battery Creek project public meeting August 25th.
    b. ToHHI - No report.
    c. ToB - No report.
    d. CoB - Not present.
        i. Battery Creek - See BC report.
    e. ToPR - No report.
11. Other items - None.
12. Next Meeting
    a. Next meeting - September 7, 2016 @ 1:30pm @ BJWSA, 6 Snake Road
13. Adjourn

14. Conference Call with Carolina Clear to discuss N4CW - Katie (via phone) discussed her observation that the name N4CW doesn't really describe the geographic area that we are when compared to the other areas of the state. Katie suggested N4CW be a subtitle, a program, an initiative, or similar in order to keep the concept but used with a new name. She suggested N4CW be a certification program on water quality for businesses, contractors, or residential neighborhoods, etc. Kim Jones suggested doing something similar to a backyard habitat program and get business sponsorships to provide benefits to participates. Katie also suggested that N4CW be a litter pickup program. So the question is, what is the name of the agency/group that is identified with the N4CW initiatives? It was suggested that everyone brain storm and email names to Katie. She will do a survey monkey and see if we can get some consensus.

MEMORANDUM

Date: August 10, 2016

To: Stormwater Management Utility Board

From: David Wilhelm, P. E., Public Works Director

Re: **Maintenance Project Report**

This report will cover three major and eight minor or routine projects. The Project Summary Reports are attached. (**Stormwater Summary Map by District**)

Major Projects – Storm Drainage System Improvements:

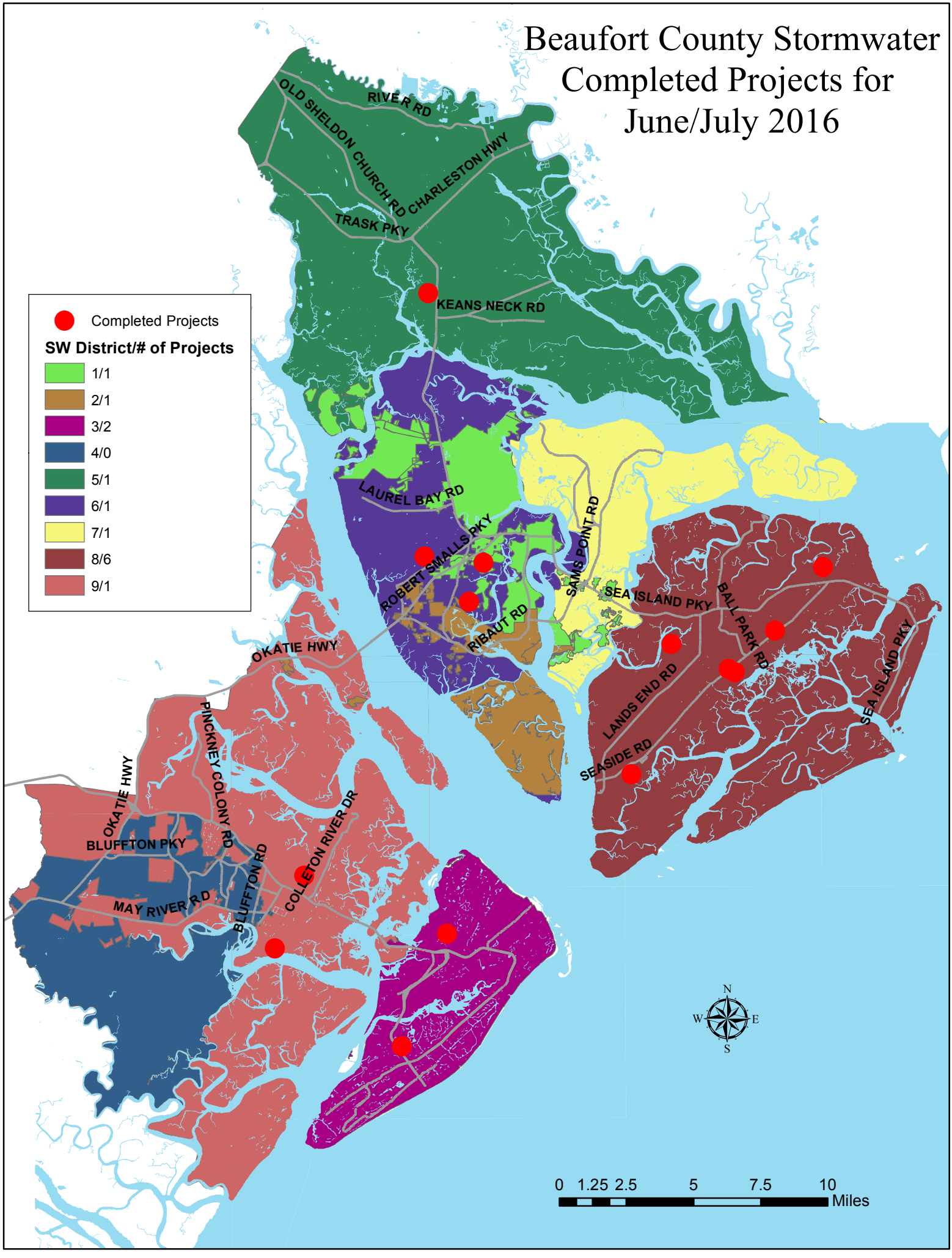
- **Arrow Road- Town of Hilton Head Island (ToHHI) – Stormwater Utility District (SWUD) 3:** This project consisted of improving 2,742 feet of roadside ditch. The work also included cleaning out various pipes and hydroseeding for erosion control within the project limits. Work began April 18th and was completed June 16th. The total cost of the project was **$52,503.84.** Per the agreement between ToHHI and Beaufort County, ToHHI reimbursed the County $29,400 for this work.
- **William Jenkins Road – SWUD 8:** This major project improved 1,775 feet of drainage system. In addition to the roadside ditch cleaning, three driveway pipes were replaced and various drainage pipes cleaned. Work began January 28th and was completed March 3rd. The total cost of the project was **$19,736.66.**
- **Katie Miller Drive and Ceasar Place – SWUD 3:** Work completed on this project included cleaning out 2,971 feet of roadside ditch, two catch basins, and jet cleaning various pipes. Work began February 10th and was completed February 23rd. The total cost of the project was **$16,429.90.**

Minor or Routine Projects:

- **Tanglewood Drive – SWUD 2 & 6:** This project improved almost ½ mile of roadside drainage system on Tanglewood Drive in Port Royal. The roadside ditch was cleaned along with the connecting drainage pipes. The total cost of this project was **$14,615.38.**
- **Possum Hill Road – SWUD 6:** This project improved 28 feet of existing drainage system, replacement of a separated crossline pipe, installing roadside pipe and rip rap. The total cost was **$12,283.33.**
- **Alljoy Area – SWUD 9:** This project consisted of cleaning 895 feet of roadside dich and jet cleaning various pipes in the Alljoy area in Bluffton. The total cost was **$11,081.61.**
- **St. Helena Island Valley Drains – SWUD 8:** Work included cleaning out over 15,000 feet of valley drains on St. Helena Island. The total cost was **$3,383.20.**

- **Old Sawmill Drive – SWUD 7:** This project was to repair a sinkhole in the Victoria Bluff community in Bluffton**.** The total cost was **$2,054.56.**
- **Jasmine Hall Road – SWUD 5:** This project consisted of removing debris from the roadside ditch and cleaning the ditch to improve drainage. The total cost was **$1,835.84.**
- **Old Salem Road – SWUD 1:** Work consisted of jet cleaning 104 feet of driveway pipe and constructing a flume for surface run-off**.** The total cost was **$1,800.34.**
- **Folly Road Channel #1 – SWUD 8:** This project consisted of cleaning out 402 feet of channel and removing one access pipe. The total cost was **$1,492.09.**

Beaufort County Stormwater Completed Projects for June/July 2016



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: ToHHI - Arrow Road (Reimbursement)

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 4/18/16 - 6/16/16

Project improved 2,826 L.F. of drainage system. Cleaned out (2) catch basins and 2,742 L.F. of roadside ditch. Jetted (1) crossline pipe, (19) driveway pipes and 84 L.F. of channel pipe. Hydroseeded for erosion control.

2016-590 / ToHHI - Arrow Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	2.0	$46.98	$0.00	$0.00	$0.00	$26.46	$73.44
CBCO / Catch basin - clean out	20.0	$469.80	$86.80	$57.90	$0.00	$308.90	$923.40
DLO / Ditch Layout	98.0	$2,170.82	$177.28	$65.08	$0.00	$1,198.30	$3,611.47
DPJT / Driveway Pipe - Jetted	45.0	$1,063.10	$363.20	$162.20	$0.00	$700.15	$2,288.65
HAUL / Hauling	184.0	$4,084.24	$1,470.12	$641.03	$0.00	$2,644.44	$8,839.83
HYDR / Hydroseeding	55.0	$1,224.09	$181.11	$1,041.27	$0.00	$732.50	$3,178.96
LM / Loading Materials	35.0	$821.98	$265.97	$57.65	$0.00	$475.80	$1,621.40
ONJV / Onsite Job Visit	26.0	$825.14	$92.28	$48.87	$0.00	$582.58	$1,548.87
PROFS / Professional Services	0.0	$0.00	$0.00	$0.00	$717.15	$0.00	$717.15
RMTRD / Remove trees - Ditch	48.0	$1,066.63	$202.70	$39.39	$0.00	$533.00	$1,841.72
RSDCL / Roadside Ditch - Cleanout	576.0	$12,750.12	$1,955.12	$385.22	$0.00	$7,660.83	$22,751.29
RSPJ / Roadside Pipe - Jetted	40.0	$890.99	$58.23	$41.53	$0.00	$530.90	$1,521.65
TC / Traffic Control - Jobsite	90.0	$1,997.78	$264.05	$68.99	$0.00	$1,198.30	$3,529.12
UTLOC / Utility locates	1.5	$37.05	$0.00	$0.00	$0.00	$19.85	$56.90
2016-590 / ToHHI - Arrow Road Sub Total	**1,220.5**	**$27,448.71**	**$5,116.86**	**$2,609.12**	**$717.15**	**$16,612.00**	**$52,503.84**
Grand Total	**1,220.5**	**$27,448.71**	**$5,116.86**	**$2,609.12**	**$717.15**	**$16,612.00**	**$52,503.84**

Before

During

After

Project: ToHHI-Arrow Road Reimbursement Map 1

Activity:Routine/ Preventive Maintenance

Project #: 2016-590

Township/SW Dist: ToHHI/3

Completed: June 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 80 160 320 480 640 Feet

1 inch = 330 feet

Prepared By: BC Stormwater Management Utility
Date Print:6/6/16
File:C:\project summaries map/ToHHI Arrow Road Map 1_2016-590

Project: ToHHI-Arrow Road Reimbursement Map 2

Activity: Vacuum Truck

Project #: 2016-590

Township/SW Dist: ToHHI/3

Completed: June 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 80 160 320 480 640 Feet

1 inch = 330 feet

Prepared By: BC Stormwater Management Utility
Date Print:6/6/16
File:C:\project summaries map/ToHHI Arrow Road Map 2_2016-590

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: William Jenkins Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 1/28/16 - 3/3/16

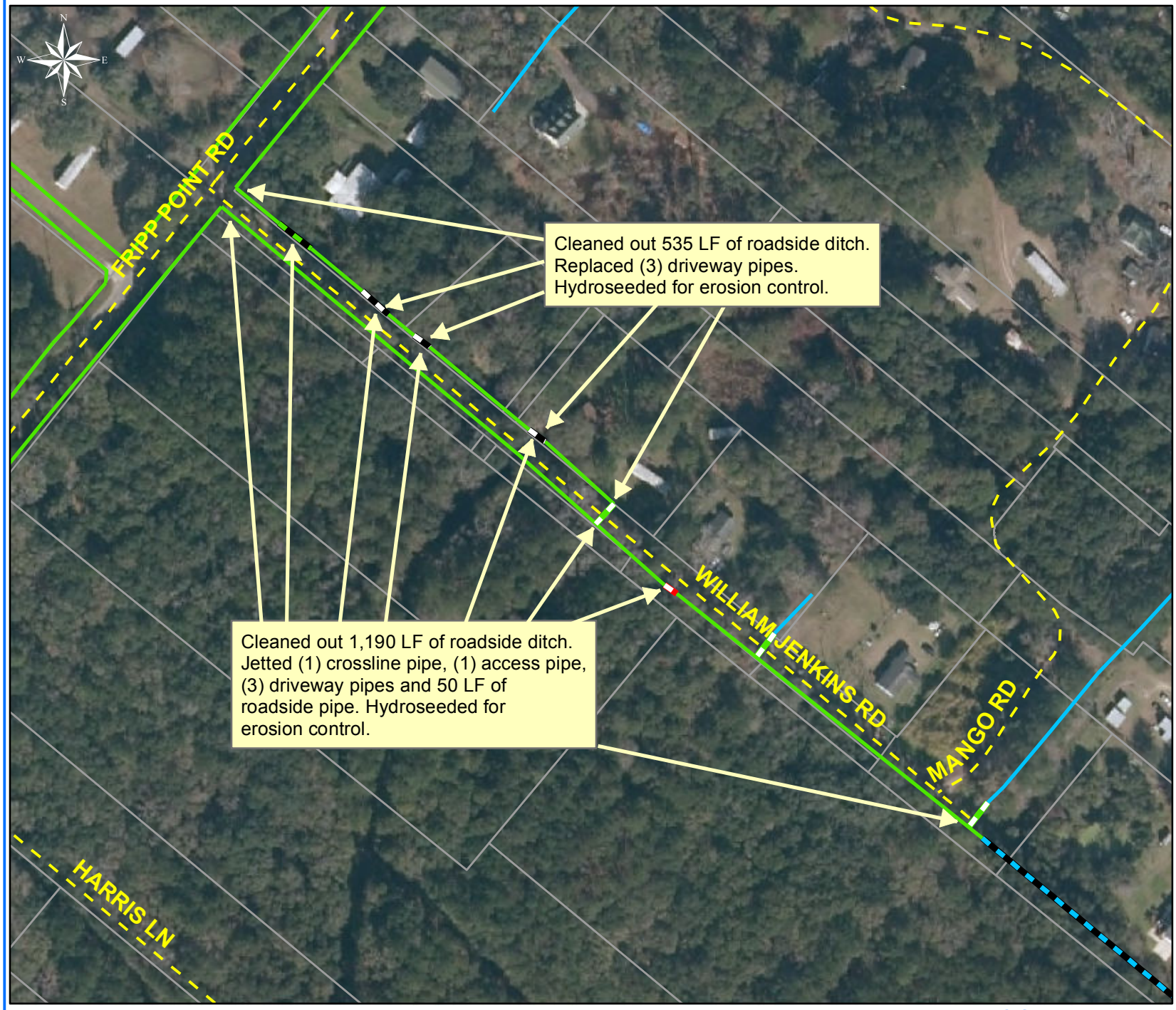
Project improved 1,775 L.F. of drainage system. Cleaned out 1,725 L.F. of roadside ditch. Replaced (3) driveway pipes and 24 L.F. of roadside pipe. Jetted (1) crossline pipe, (1) access pipe, (3) driveway pipes and 50 L.F. of roadside pipe. Hydroseeded for erosion control.

2016-588 / William Jenkins Road	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
CCO / Channel - cleaned out	20.0	$464.00	$118.55	$23.62	$0.00	$307.20	$913.37
DPINS / Driveway Pipe - Installed	20.0	$474.85	$117.42	$261.30	$0.00	$300.15	$1,153.72
DPJT / Driveway Pipe - Jetted	10.0	$228.80	$43.40	$30.10	$0.00	$148.50	$450.80
HAUL / Hauling	107.0	$2,383.50	$854.93	$1,094.73	$0.00	$1,542.94	$5,876.10
HYDR / Hydroseeding	9.0	$186.72	$23.06	$104.43	$0.00	$116.64	$430.85
ONJV / Onsite Job Visit	22.0	$813.62	$78.36	$46.86	$0.00	$582.80	$1,521.64
RSDCL / Roadside Ditch - Cleanout	163.0	$3,720.49	$760.66	$616.40	$0.00	$2,387.05	$7,484.60
TC / Traffic Control - Jobsite	28.0	$574.70	$24.78	$7.10	$0.00	$357.63	$964.21
UTLOC / Utility locates	25.5	$521.05	$35.40	$39.39	$0.00	$327.16	$923.00
2016-588 / William Jenkins Road Sub Total	**405.0**	**$9,379.48**	**$2,056.56**	**$2,223.93**	**$0.00**	**$6,076.69**	**$19,736.66**
Grand Total	**405.0**	**$9,379.48**	**$2,056.56**	**$2,223.93**	**$0.00**	**$6,076.69**	**$19,736.66**

Before

During

After



Project: William Jenkins Road

Activity: Routine/ Preventive Maintenance

Project #: 2016-588

Township/SW Dist: St. Helena Island/8

Completed: March 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/20/16
File:C:\project summaries map/William Jenkins Road_2016-588

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Katie Miller Drive and Ceasar Place

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 2/10/16 - 2/23/16

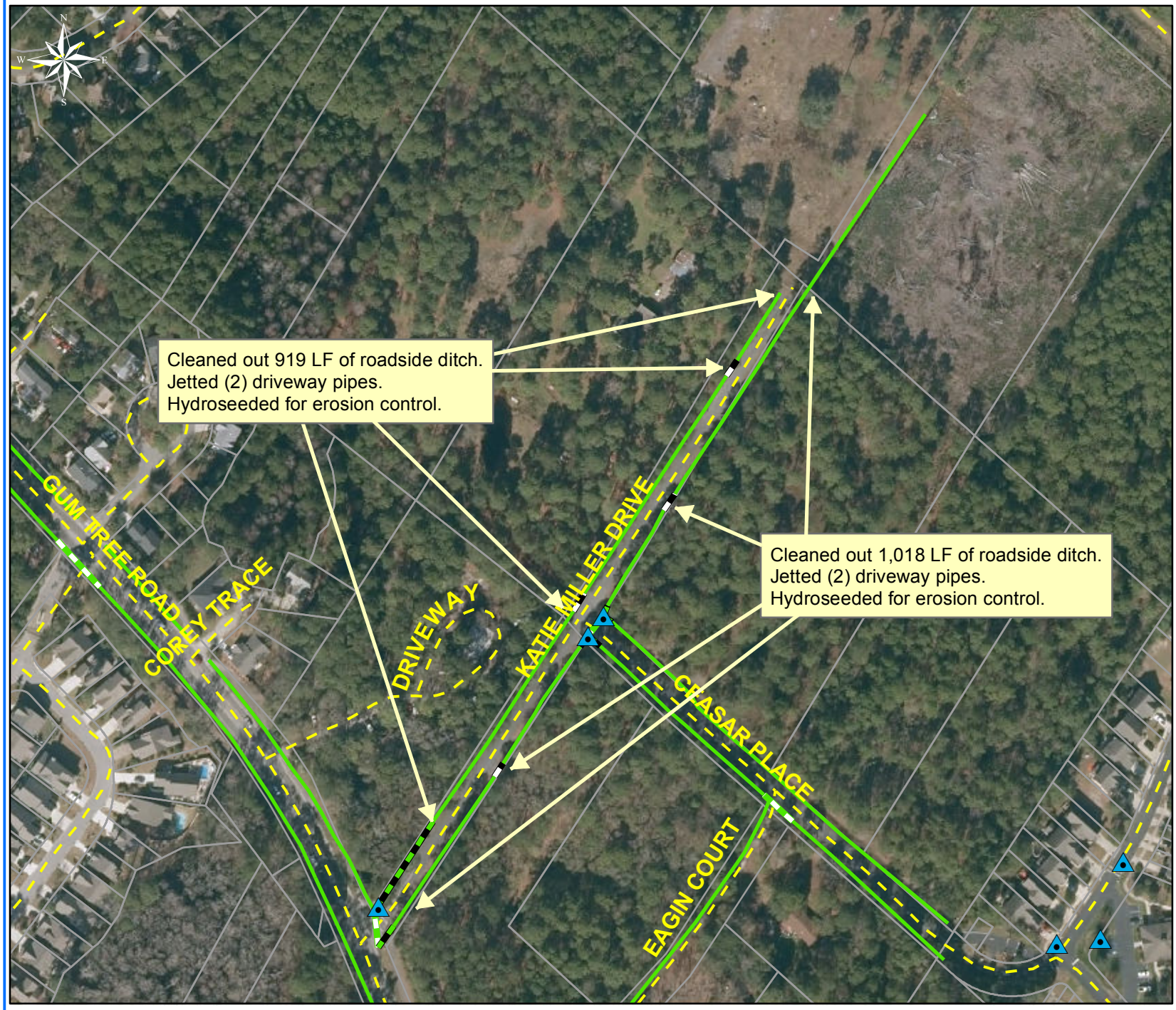
Project improved 3,249 L.F. of drainage system. Cleaned out 2,971 L.F. of roadside ditch and (2) catch basins. Jetted (4) driveway pipes, (1) crossline pipe and 278 L.F. of roadside pipe. Hydroseeded for erosion control.

2016-584 / Katie Miller Dr/Ceasar Place	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
CBCO / Catch basin - clean out	20.0	$457.60	$86.80	$41.79	$0.00	$297.00	$883.19
CCO / Channel - cleaned out	90.0	$1,888.95	$344.49	$34.65	$0.00	$1,188.10	$3,456.19
HAUL / Hauling	60.0	$1,336.20	$479.40	$162.15	$0.00	$865.20	$2,842.95
HYDR / Hydroseeding	20.0	$415.30	$42.58	$82.20	$0.00	$260.35	$800.43
ONJV / Onsite Job Visit	8.0	$273.44	$28.32	$16.32	$0.00	$195.76	$513.84
PROFS / Professional Services	0.0	$0.00	$0.00	$0.00	$224.15	$0.00	$224.15
RSDCL / Roadside Ditch - Cleanout	190.0	$3,976.50	$780.21	$85.09	$0.00	$2,498.30	$7,340.10
RSPJ / Roadside Pipe - Jetted	8.0	$178.24	$34.72	$23.01	$0.00	$114.72	$350.69
2016-584 / Katie Miller Dr/Ceasar Place Sub Total	**396.5**	**$8,537.98**	**$1,796.52**	**$445.21**	**$224.15**	**$5,426.04**	**$16,429.90**
Grand Total	**396.5**	**$8,537.98**	**$1,796.52**	**$445.21**	**$224.15**	**$5,426.04**	**$16,429.90**

Before

During

After



Project: Katie Miller Drive and Ceasar Place
Map 1

Activity: Routine/ Preventive Maintenance

Project #: 2016-584

Township/SW Dist: Hilton Head Island/ 3

Completed: February 2016

Legend

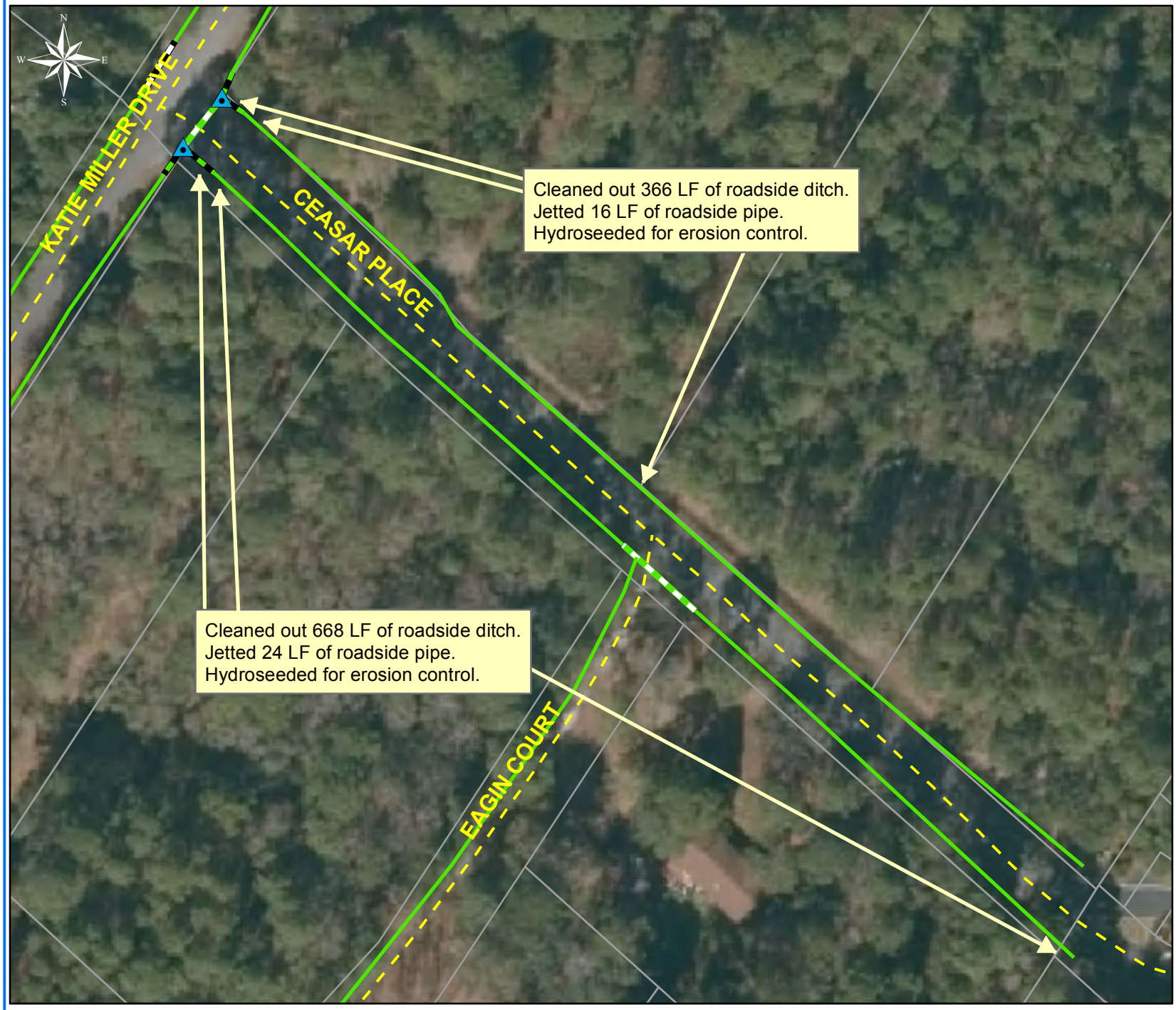
Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 50 100 200 300 400 Feet

1 inch = 210 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/20/16
File:C:\project summaries map/Katie Miller and Ceasar Place Map 1_2016-584



Project: Katie Miller Drive and Ceasar Place
Map 2

Activity: Routine/ Preventive Maintenance

Project #: 2016-584

Township/SW Dist: Hilton Head Island/ 3

Completed: February 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 20 40 80 120 160 Feet

1 inch = 83 feet

Prepared By: BC Stormwater Management Utility
Date Print:12/29/09
File:C:\project summaries map/Katie Miller and Ceasar Place Map 2_2016-584

Project: Katie Miller Drive and Ceasar Place
Map 3

Activity: Vacuum Truck

Project #: 2016-584

Township/SW Dist: Hilton Head Island/ 3

Completed: February 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 20 40 80 120 160 Feet

1 inch = 83 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/20/16
File:C:\project summaries map/Katie Miller and Ceasar Place Map 3_2016-584

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Tanglewood Drive

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 3/15/16 - 4/28/16

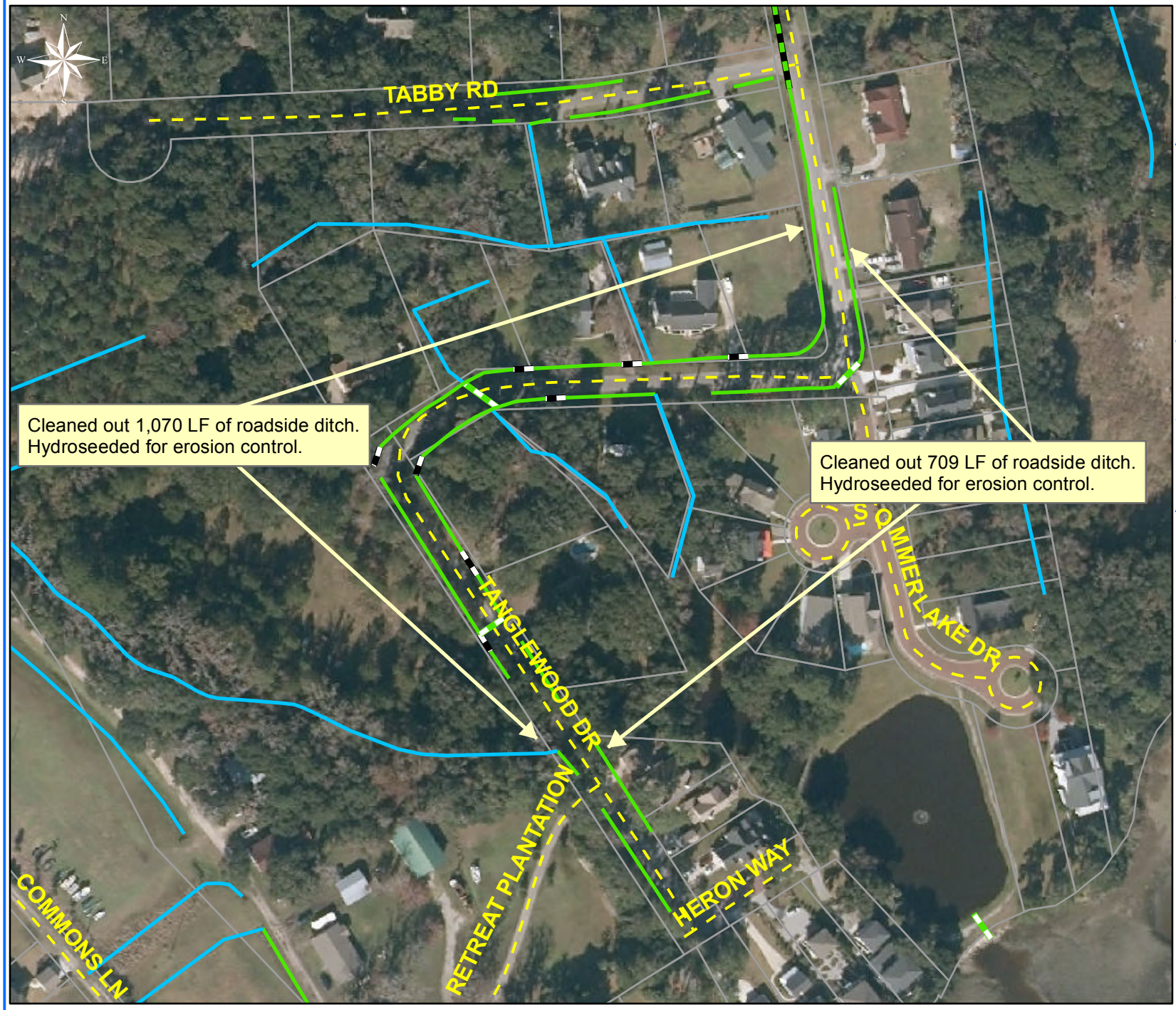
Project improved 2,622 L.F. of drainage system. Cleaned out 1,779 L.F. of roadside ditch. Jetted (3) crossline pipes, (7) driveway pipes and 843 L.F. of roadside pipe. Repaired washout. Hydroseeded for erosion control.

2016-589 / Tanglewood Drive	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
CLPJT / Crossline Pipe - Jetted	33.0	$755.04	$143.22	$55.69	$0.00	$490.05	$1,444.00
DPJT / Driveway Pipe - Jetted	8.0	$183.04	$34.72	$24.11	$0.00	$118.80	$360.67
HAUL / Hauling	45.0	$1,002.15	$359.55	$124.60	$0.00	$648.90	$2,135.20
ONJV / Onsite Job Visit	15.0	$512.70	$53.10	$39.76	$0.00	$367.05	$972.61
RDREC / Roadside ditch - reconstructed	9.0	$209.24	$53.47	$82.46	$0.00	$129.42	$474.59
RPWO / Repaired Washout	10.0	$225.20	$48.11	$7.55	$0.00	$133.35	$414.21
RSDCL / Roadside Ditch - Cleanout	214.0	$4,530.24	$1,206.76	$180.56	$0.00	$2,859.22	$8,776.78
UTLOC / Utility locates	0.5	$12.35	$0.00	$0.00	$0.00	$6.62	$18.97
2016-589 / Tanglewood Drive Sub Total	**335.0**	**$7,441.70**	**$1,898.93**	**$514.73**	**$0.00**	**$4,760.02**	**$14,615.38**
Grand Total	**335.0**	**$7,441.70**	**$1,898.93**	**$514.73**	**$0.00**	**$4,760.02**	**$14,615.38**

Before

During

After



Project:Tanglewood Drive
Map 1

Activity: Routine/ Preventive Maintenance

Project #:
2016-589

Township/SW Dist:
Port Royal Island/ 2&6

Completed:
April 2016

Legend

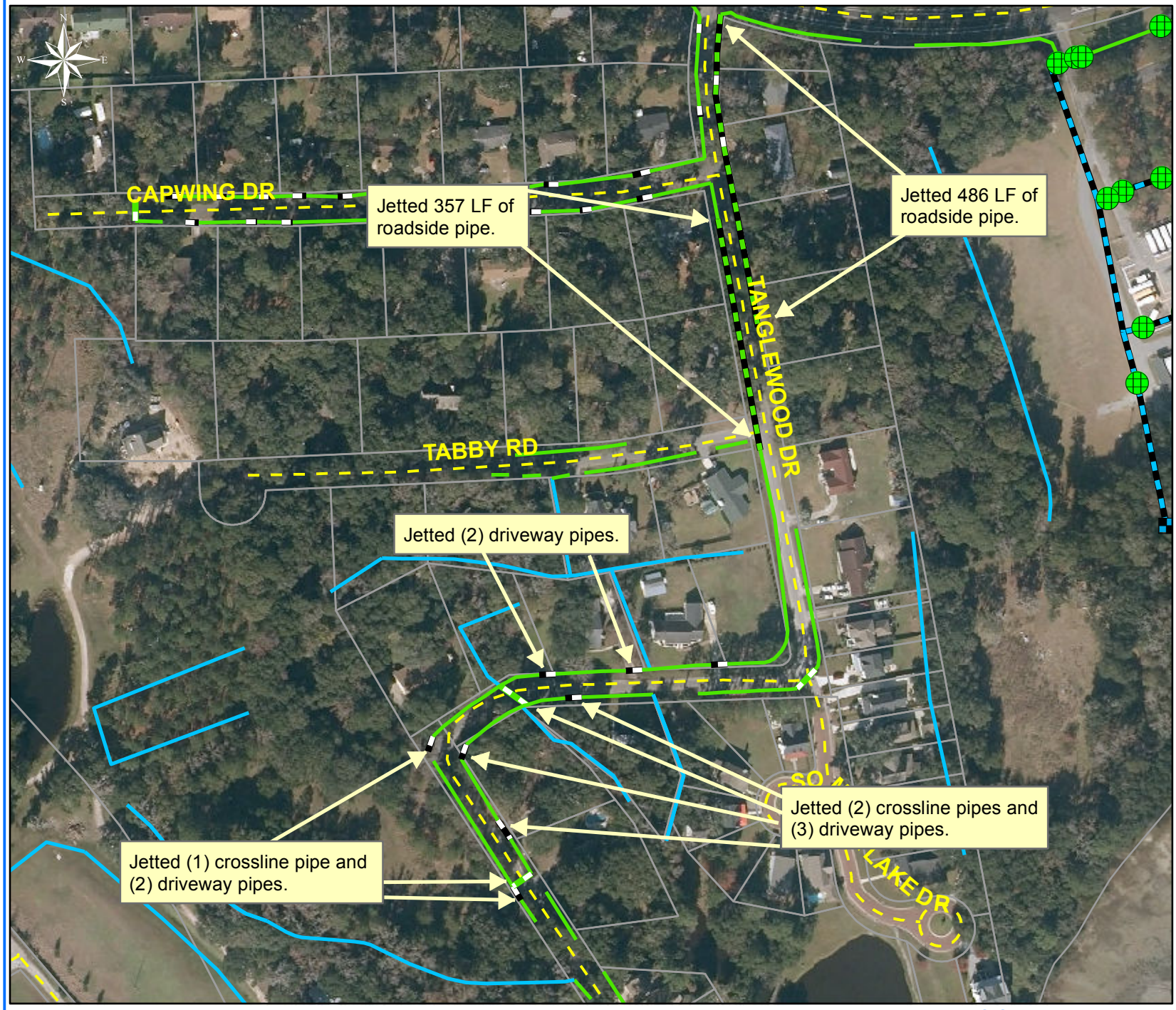
Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/16
File:C:\project summaries map/Tanglewood Drive Map 1_2016-589



Project:Tanglewood Drive
Map 2

Activity: Vacuum Truck

Project #:
2016-589

Township/SW Dist:
Port Royal Island/
2&6

Completed:
April 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 50 100 200 300 400 Feet

1 inch = 210 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/16
File:C:\project summaries map/Tanglewood Drive Map 2_2016-589

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Possum Hill Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 4/5/16 - 4/7/16

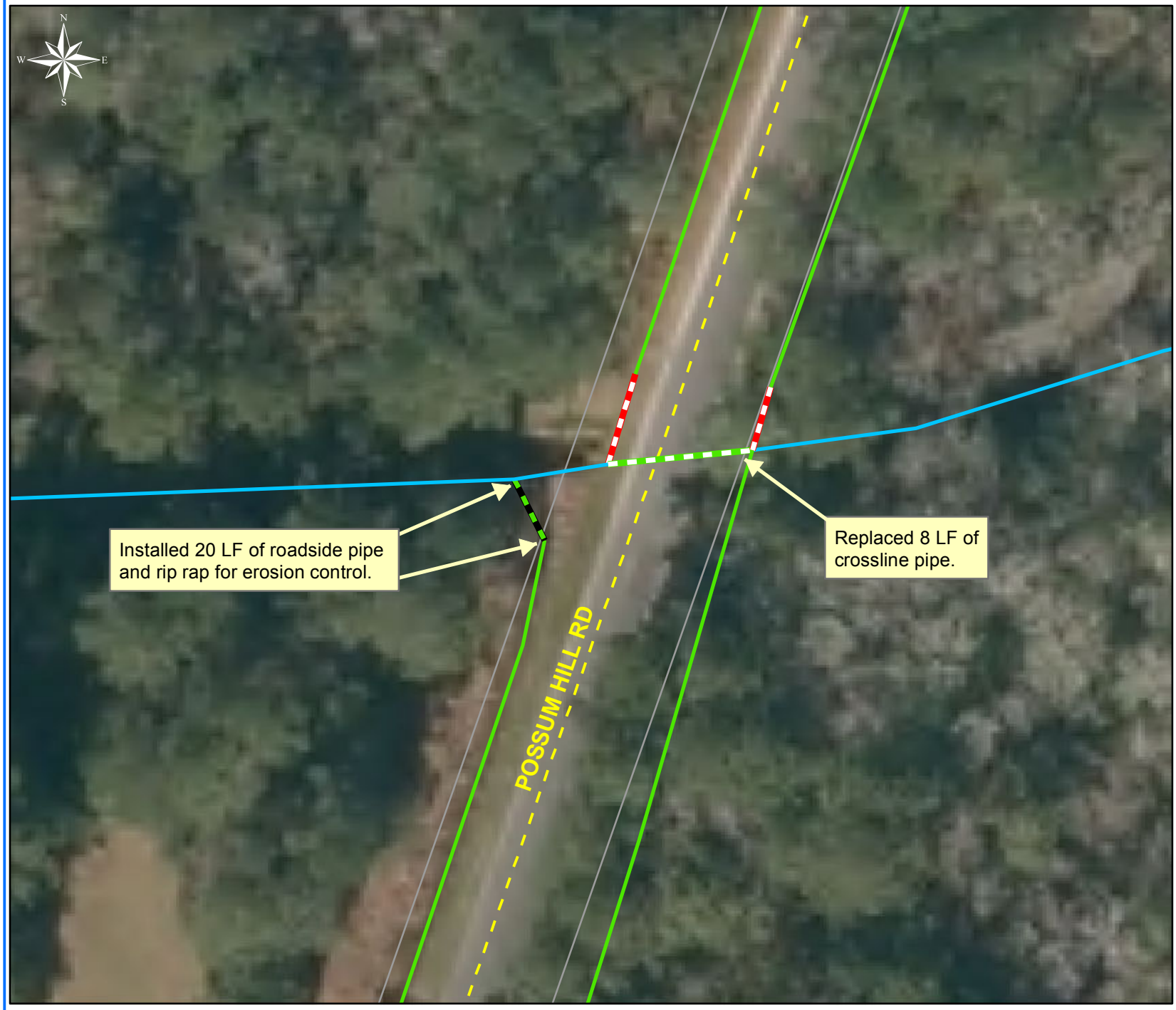
Project improved 28 L.F. of drainage system. Replaced 8 L.F. of crossline pipe. Installed 20 L.F. of roadside pipe and rip rap for erosion control.

2016-577 / Possum Hill Road	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
CPRPL / Crossline Pipe - Replaced	40.0	$947.10	$234.20	$506.87	$0.00	$598.20	$2,286.37
HAUL / Hauling	63.0	$1,434.60	$503.37	$2,838.50	$0.00	$908.46	$5,684.93
LM / Loading Materials	10.0	$222.70	$278.90	$0.00	$0.00	$144.20	$645.80
ONJV / Onsite Job Visit	21.0	$721.17	$74.58	$18.46	$0.00	$486.18	$1,300.39
RP / Replaced Posts	6.0	$117.42	$10.62	$37.44	$0.00	$73.26	$238.74
RSPI / Roadside Pipe - Installed	40.0	$910.56	$270.76	$323.69	$0.00	$565.80	$2,070.81
UTLOC / Utility locates	1.0	$24.70	$0.00	$0.00	$0.00	$13.23	$37.93
2016-577 / Possum Hill Road Sub Total	**181.5**	**$4,390.00**	**$1,372.43**	**$3,724.96**	**$0.00**	**$2,795.94**	**$12,283.33**
Grand Total	**181.5**	**$4,390.00**	**$1,372.43**	**$3,724.96**	**$0.00**	**$2,795.94**	**$12,283.33**

Before

During

After



Project: Possum Hill Road

Activity: Routine/ Preventive Maintenance

Project #: 2016-577

Township/SW Dist: Port Royal Island/6

Completed: April 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 10 20 40 60 80 Feet

1 inch = 42 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/25/2016
File:C:\project summaries map/Possum Hill Road_2016-577

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Alljoy Area

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 10/1/15 - 3/9/16

Project improved 951 L.F. of drainage system. Cleaned out 895 L.F. of roadside ditch. Jetted (6) crossline pipes, (12) driveway pipes and 56 L.F. of roadside pipe.

2015-553 / Alljoy Area	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
CLPJT / Crossline Pipe - Jetted	48.0	$1,098.24	$208.32	$117.74	$0.00	$712.80	$2,137.10
DPJT / Driveway Pipe - Jetted	10.0	$228.80	$43.40	$26.38	$0.00	$148.50	$447.07
HAUL / Hauling	39.0	$885.54	$302.71	$101.84	$0.00	$570.00	$1,860.09
ONJV / Onsite Job Visit	17.0	$600.47	$60.34	$34.08	$0.00	$428.73	$1,123.62
PL / Project Layout	4.0	$182.40	$14.48	$4.26	$0.00	$135.84	$336.98
PRRECON / Project Reconnaissance	3.0	$136.80	$10.86	$4.26	$0.00	$101.88	$253.80
RB / Remove blockage from flowline	6.0	$148.98	$84.79	$25.67	$0.00	$99.42	$358.86
RSDCL / Roadside Ditch - Cleanout	108.0	$2,295.52	$285.12	$52.03	$0.00	$1,453.56	$4,086.23
SVCREQ / Service Request	5.0	$228.00	$18.10	$5.68	$0.00	$169.80	$421.58
UTLOC / Utility locates	1.0	$24.70	$0.00	$0.00	$0.00	$13.23	$37.93
2015-553 / Alljoy Area Sub Total	**241.5**	**$5,841.20**	**$1,028.12**	**$371.93**	**$0.00**	**$3,840.37**	**$11,081.61**
Grand Total	**241.5**	**$5,841.20**	**$1,028.12**	**$371.93**	**$0.00**	**$3,840.37**	**$11,081.61**

Before

During

After

Project: Alljoy Area Map 1

Activity: Routine/ Preventive Maintenance

Project #: 2015-553

Township/CC Dist: Bluffton/9

Completed: March 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:7/18/16
File:C:\project summaries map/Alljoy AreaMap1_2015-553

Project: Alljoy Area Map 2

Activity: Vacuum Truck

Project #: 2015-553

Township/CC Dist: Bluffton/9

Completed: March 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 60 120 240 360 480 Feet

1 inch = 250 feet

Prepared By: BC Stormwater Management Utility
Date Print:7/18/16
File:C:\project summaries map/Alljoy Area Map 2_2015-553

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: St Helena Island Valley Drains

Activity: Routine/Preventive Maintenance

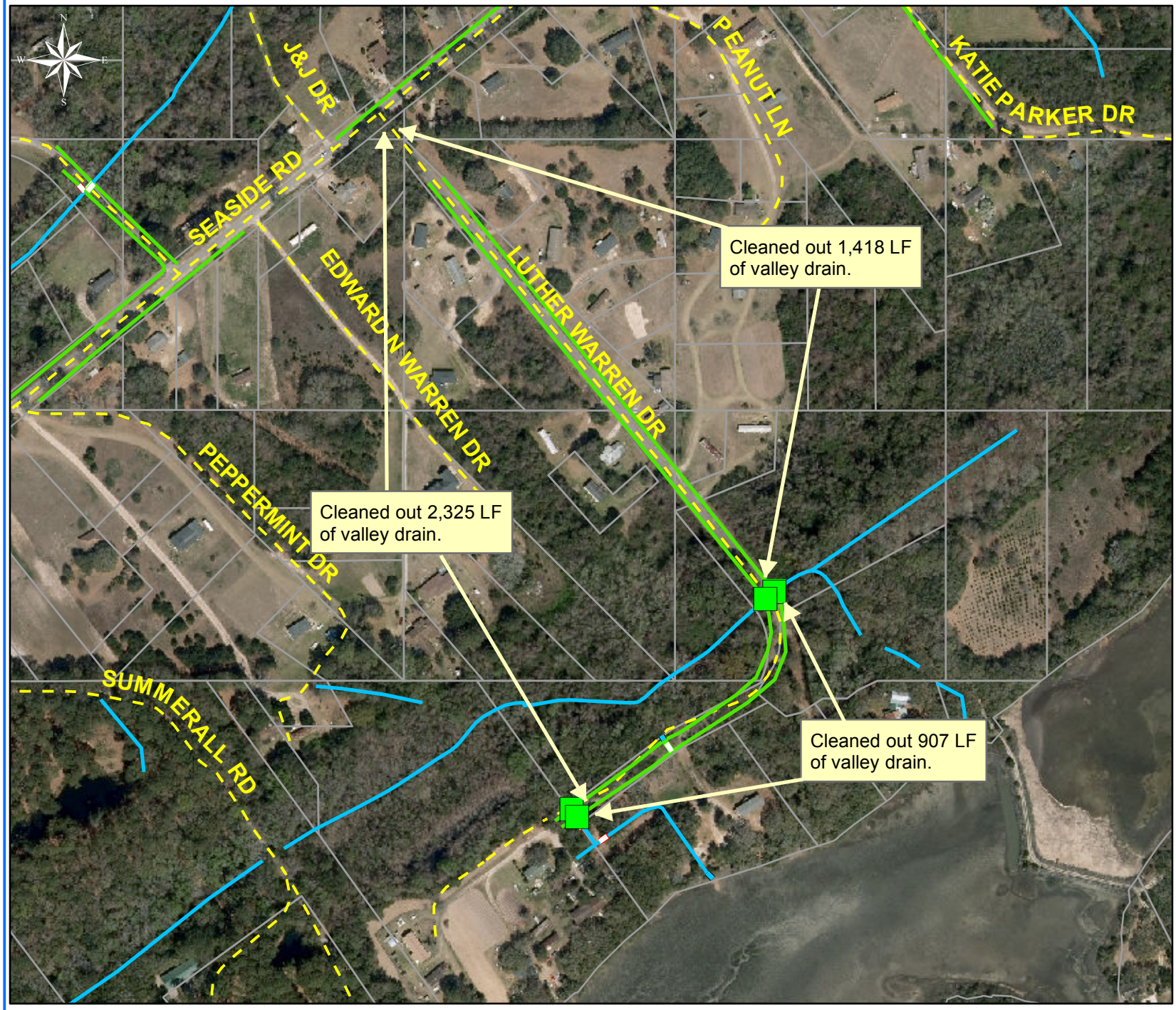
Narrative Description of Project:

Duration: 7/29/15 - 7/30/15

Project improved 15,552 L.F. of drainage system. Cleaned out 15,552 L.F. of valley drains. This project is consisted of the following areas: Tombee Road (7,418 L.F.), White Sands Circle (1,240 L.F.), Luther Warren Drive (4,650 L.F.), and Hunters Grove Road (2,244 L.F.)

2016-311 / St Helena Island Valley Drains	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
COVD / Cleaned Out Valley Drains	70.0	$1,492.91	$166.32	$38.16	$0.00	$944.10	$2,641.49
HAUL / Hauling	15.0	$334.20	$119.85	$53.00	$0.00	$216.30	$723.35
2016-311 / St Helena Island Valley Drains Sub Total	**85.5**	**$1,838.86**	**$286.17**	**$91.16**	**$0.00**	**$1,167.01**	**$3,383.20**
Grand Total	**85.5**	**$1,838.86**	**$286.17**	**$91.16**	**$0.00**	**$1,167.01**	**$3,383.20**

(Pictures Not Available)



Project: St. Helena Island Valley Drains- Luther Warren Drive

Activity: Routine/ Preventive Maintenance

Project #: 2016-311

Township/SW Dist: St.Helena Island/8

Completed: July 2015

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 80 160 320 480 640 Feet

1 inch = 330 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/2016
File:C:\project summaries map/SHI Valley Drains- Luther Warren Drive_2016-311

Project: St. Helena Island Valley Drains- White Sands Circle

Activity: Routine/ Preventive Maintenance

Project #: 2016-311

Township/SW Dist: St. Helena Island/8

Completed: July 2015

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 30 60 120 180 240 Feet

1 inch = 130 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/2016
File:C:\project summaries map/St.Helena Island Valley Drains White Sands_2016-311

Project: St. Helena Island Valley Drains -Hunters Grove Road

Activity: Routine/ Preventive Maintenance

Project #: 2016-311

Township/SW Dist: St. Helena Island/8

Completed: July 2015

Legend

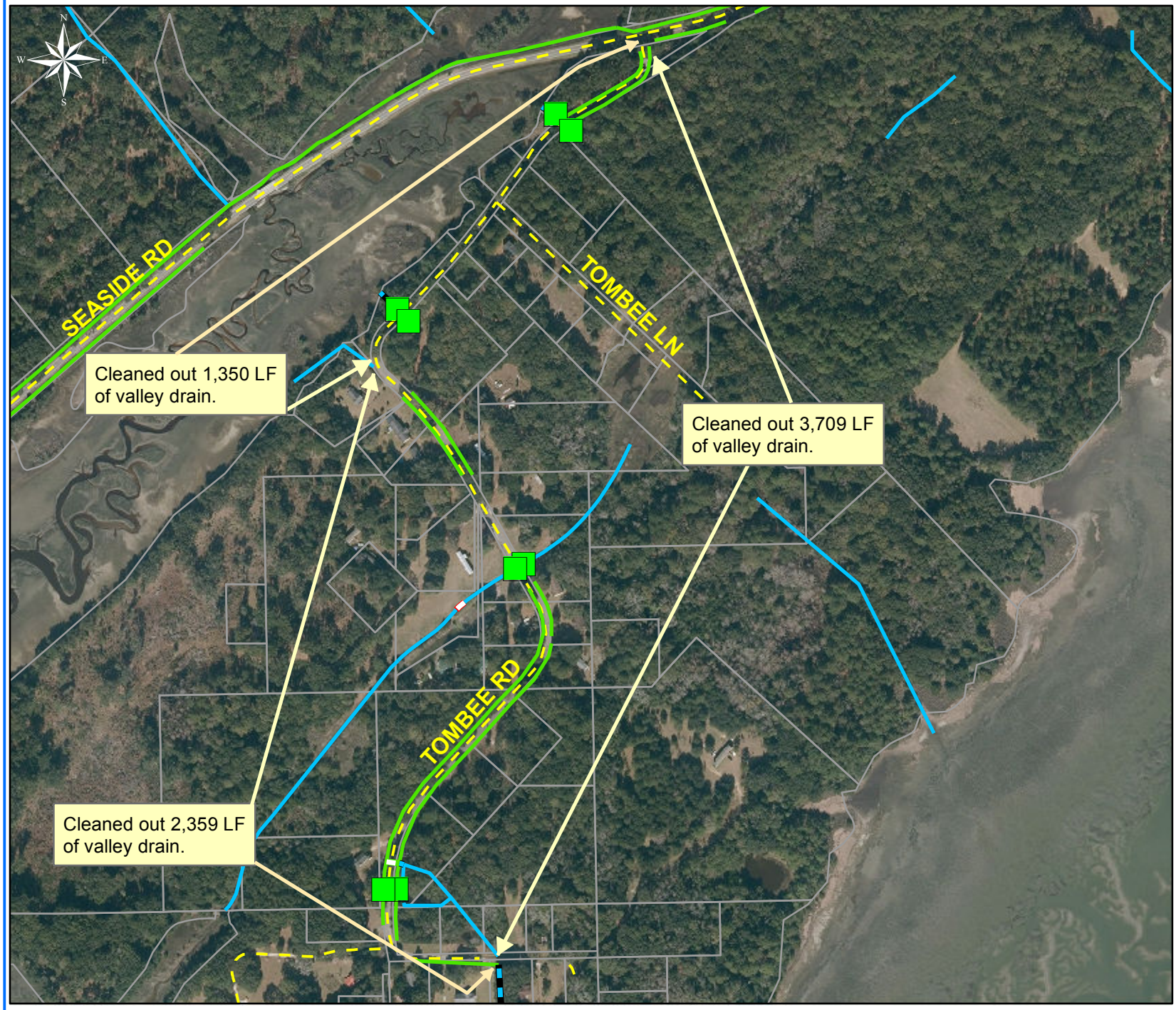
Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/16
File:C:\project summaries map/SHI Valley Drains- Hunters Road_2016-311



Project: St. Helena Island Valley Drains -Tombee Road

Activity: Routine/ Preventive Maintenance

Project #: 2016-311

Township/SW Dist: St. Helena Island/8

Completed: July 2015

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 100200 400 600 800 Feet

1 inch = 420 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/16
File:C:\project summaries map/SHI Valley Drainds- Tombee Road_2016-311

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Old Sawmill Drive

Activity: Routine/Preventive Maintenance

Narrative Description of Project:
Repaired sinkhole.

Duration: 2/23/16

2016-597 / Old Sawmill Drive	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
HAUL / Hauling	11.0	$244.97	$87.89	$137.31	$0.00	$158.62	$628.79
SD / Soft Digging	12.0	$267.36	$52.08	$31.51	$0.00	$172.08	$523.03
SR / Sinkhole repair	24.0	$499.80	$21.24	$50.68	$0.00	$312.66	$884.38
2016-597 / Old Sawmill Drive Sub Total	**47.5**	**$1,023.88**	**$161.21**	**$219.50**	**$0.00**	**$649.97**	**$2,054.56**
Grand Total	**47.5**	**$1,023.88**	**$161.21**	**$219.50**	**$0.00**	**$649.97**	**$2,054.56**

Before

During

After

Project: Old Sawmill Drive

Activity: Routine/ Preventive Maintenance

Project #: 2016-597

Township/SW Dist: Bluffton/7

Completed: February 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 10 20 40 60 80 Feet

1 inch = 50 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/16
File:C:\project summaries map/Old Sawmill Drive_2016-597

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Jasmine Hall Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 2/9/16

Project improved 800 L.F. of drainage system. Cleaned out 800 L.F. of roadside ditch.

2016-593 / Jasmine Hall Road	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
HAUL / Hauling	8.0	$178.16	$63.92	$14.81	$0.00	$115.36	$372.25
ONJV / Onsite Job Visit	4.0	$136.72	$14.16	$8.16	$0.00	$97.88	$256.92
RSDCL / Roadside Ditch - Cleanout	32.0	$664.48	$89.14	$18.13	$0.00	$416.56	$1,188.31
2016-593 / Jasmine Hall Road Sub Total	**44.5**	**$991.11**	**$167.22**	**$41.10**	**$0.00**	**$636.42**	**$1,835.84**
Grand Total	**44.5**	**$991.11**	**$167.22**	**$41.10**	**$0.00**	**$636.42**	**$1,835.84**

Before

During

After

Project: Jasmine Hall Road

Activity: Routine/ Preventive Maintenance

Project #: 2016-593

Township/SW Dist: Sheldon/5

Completed: February 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 50 100 200 300 400 Feet

1 inch = 210 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/20/16
File:C:\project summaries map/Jasmine Hall Road_2016-593

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Old Salem Road (Rework)

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 2/8/16 - 2/22/16

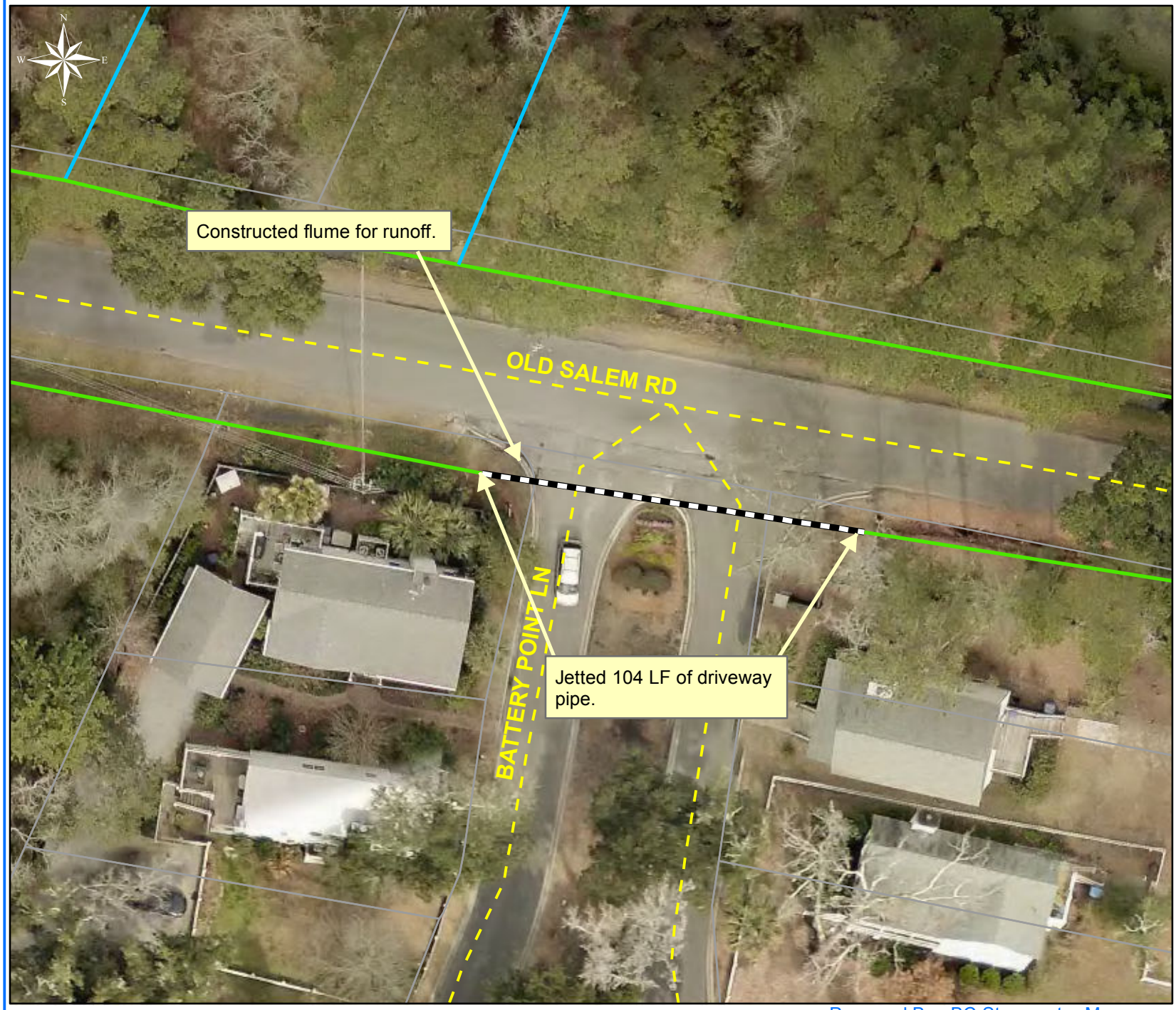
Project improved 104 L.F. drainage system. Constructed flume for runoff. Jetted 104 L.F. of driveway pipe.

2016-534R / Old Salem Road Rework	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
CLPJT / Crossline Pipe - Jetted	2.0	$49.40	$17.36	$10.37	$0.00	$32.94	$110.07
FC / Flume - Constructed	15.0	$343.71	$21.24	$5.64	$0.00	$209.94	$580.53
HAUL / Hauling	3.0	$66.81	$23.97	$330.06	$0.00	$43.26	$464.10
ONJV / Onsite Job Visit	11.0	$351.97	$38.94	$10.88	$0.00	$225.49	$627.28
2016-534R / Old Salem Road Rework Sub Total	**31.5**	**$823.64**	**$101.51**	**$356.95**	**$0.00**	**$518.25**	**$1,800.34**
Grand Total	**31.5**	**$823.64**	**$101.51**	**$356.95**	**$0.00**	**$518.25**	**$1,800.34**

Before

During

After



Project: Old Salem Road (Rework)

Activity: Routine/ Preventive Maintenance

Project #: 2016-534R

Township/SW Dist: Port Royal Island/1

Completed: February 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 5 10 20 30 40 Feet

1 inch = 33 feet

Prepared By: BC Stormwater Management Utility
Date Print:07/18/16
File:C:\project summaries map/Old Salem Road Rework_2016-534R

Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Folly Road Channel #1

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 3/3/16 - 3/8/16

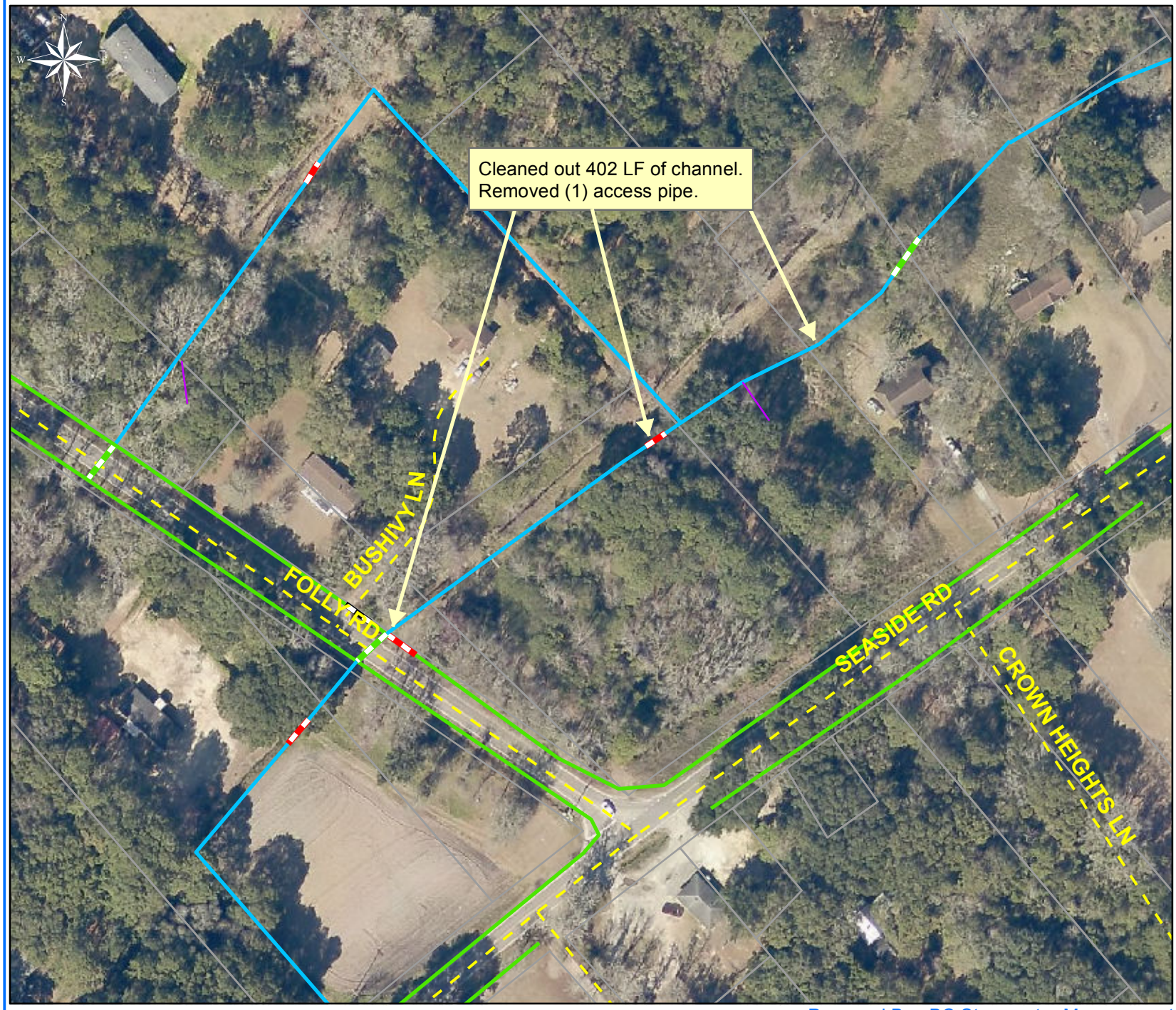
Project improved 402 L.F. of drainage system. Cleaned out 402 L.F. of channel. Removed (1) access pipe.

2016-526 / Folly Road Channel #1	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
APREM / Access pipe - removed	9.0	$191.55	$27.25	$6.04	$0.00	$116.52	$341.36
AUDIT / Audit Project	0.5	$11.75	$0.00	$0.00	$0.00	$6.62	$18.36
CCO / Channel - cleaned out	8.0	$185.60	$47.42	$13.32	$0.00	$122.88	$369.22
HAUL / Hauling	4.0	$89.12	$31.96	$9.06	$0.00	$57.68	$187.82
ONJV / Onsite Job Visit	9.0	$307.62	$31.86	$15.62	$0.00	$220.23	$575.33
2016-526 / Folly Road Channel #1 Sub Total	**30.5**	**$785.64**	**$138.49**	**$44.04**	**$0.00**	**$523.93**	**$1,492.09**
Grand Total	**30.5**	**$785.64**	**$138.49**	**$44.04**	**$0.00**	**$523.93**	**$1,492.09**

Before

During

After



Project: Folly Road Channel #1

Activity: Routine/ Preventive Maintenance

Project #: 2016-526

Township/SW Dist: St. Helena Island/8

Completed: March 2016

Legend

Drainage Type

- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Stream
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- River
- Road Pipe
- Roadside
- Roadside Pipe

0 30 60 120 180 240 Feet

1 inch = 120 feet

Prepared By: BC Stormwater Management Utility
Date Print: 07/18/16
File:C:\project summaries map/St. Helena Island Channel #1_2016-526

Beaufort County Stormwater Rate Study
Final Report – Beaufort County
March 2016

Prepared by Applied Technology & Management

Assistance from Raftelis Financial Consultants

August 18, 2015 edits by Beaufort County Stormwater Utility

Contents

Executive Summary

Beaufort County, in cooperation with the City of Beaufort, and the Towns of Bluffton, Hilton Head Island, and Port Royal retained Applied Technologies and Management (ATM) and its sub-consultant, Raftelis Financial Consultants to perform a rate study for the five stormwater utilities operated by the respective jurisdictions.

The County is facing a declining rate base driven by annexations, steeply mounting costs for maintaining county-wide drainage infrastructure and complying with new MS4 requirements, and in need of continued capital project construction. The municipalities also face challenges which vary by jurisdiction.

The rate analyses performed in support of this rate study included six options for each jurisdiction. The options vary the rate metrics (impervious area, fixed charges per ratepayer, gross area), vary the way that shared costs are allocated between jurisdictions (by impervious area or by account), accommodate the existing administrative charges paid by each jurisdiction to the County (currently at $3.18 per SFU), accommodate the existing payments made by municipalities to the County for varying levels of water quality monitoring and public outreach, and accommodate a new charge by the County to each municipality for that municipality's proportionate share of the entire County's drainage infrastructure to be maintained by the County. The detailed description of the six options is as follows:

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

In these evaluations, simplified residential rates means a series of flat rate charges for impervious area (three) similar to how the rate structure works now.

The recommended rate structure option from these evaluations is Option E.2. In this option jurisdictions can use debt financing for large capital projects, would share administrative costs allocated on a per-account basis, and would be assessed by the County a new Countywide Stormwater Infrastructure (CWI) fee that will be placed on all County tax bills in September of this year. This new fee will assist the County with funding stormwater infrastructure maintenance and repairs with all areas of the County. This new fee was developed using a proportionate share of county-wide infrastructure costs allocated across impervious and gross area within the County, including the municipalities. This option results in the most affordable rates for the County over the coming five years.

However, at this time the rate modeling done to date has been less detailed for the municipalities than it has for the County as the County is the only jurisdiction seeking to make rate structure changes immediately while the municipalities expect to not make changes until FY 2016-2017. Additional efforts between the consultants and the municipalities will complete this process over the next few months.

For the County, the existing rates are $50 per SFU per year. Continuing with the current rate structure and without proportionate share funding from the municipalities for county-wide infrastructure operation and maintenance, these rates would need to escalate over the coming five years to $120 per SFU per year by FY 2019-2020. This is a 140% increase.

Under the recommended option E.2, the rate structure will change to one with a fixed charge per account, plus a variable charge for impervious area and another variable charge for gross lot area. For a "tier 2" (average house) residence in the County on a lot smaller than 2 acres, the existing charge is $50 per SFU per year. Under option E.2 this charge would escalate to $87 in year by FY 2019-2020. This is a 74% increase. While still large, it is much more reasonable than the "stay the course" option.

The County is responsible for funding 83.6% of all county-wide infrastructure (CWI) operation and maintenance under the CWI allocation used. Under the proposed rate structure, this is $45.88 of the total $87.00 annual charge for an average house on a lot smaller than 2 acres. The land areas within the four municipalities are will be assessed the remaining CWI funding, with the charge being based on the amount of existing stormwater infrastructure the County will maintain within each jurisdiction. For this fiscal year their CWI funding on an SFU basis is:

City of Beaufort	$5.15 per SFU
Town of Port Royal	$3.88 per SFU
Town of Bluffton	$18.13 per SFU
Town of Hilton Head Island	$5.52 per SFU

Background

The southern coast of South Carolina has long been a desirable tourist destination and sought after place to live, in no small part due to the natural beauty surrounding the areas waterways. In recent years, Beaufort County has declared its intention to be a regional leader in environmental quality initiatives in order to promote this existing advantage. An important subset of environmental quality, especially in this region, is the effective management of stormwater runoff. Because the County is right on the coast, and is crossed by large water bodies otherwise, the imperative to manage stormwater runoff has immediate implications on water quality in the region, rather than somewhere downstream. Beaufort County and its underlying jurisdictions – the City of Beaufort, the Town of Port Royal, Town of Hilton Head Island, and Town of Bluffton – take this charge seriously, and have over time developed individual and cooperative programs to manage the public safety and water quality concerns related to stormwater runoff.

As these programs have matured over time, they have become more costly, and several jurisdictions now find themselves needing to evaluate their operating costs and investments in any needed capital improvement projects. The jurisdictions are interested in revising rates and exploring other financial tools to support program initiatives, especially capital spending, and have engaged Applied Technology & Management (ATM) and subcontractor Raftelis Financial Consultants (RFC) to conduct a rate structure analysis and rate studies similar to this study that was prepared for the County. This report summarizes the results of ATM's efforts on behalf of the County as work has not been completed for the four municipalities at this time.

Jurisdictional Cooperation

Although historically each jurisdiction has managed stormwater concerns indirectly through individual development standards and environmental ordinances, the group has been working together for many years to manage storm drainage and ensure an improved standard of living for residents of the County. This relationship has become more explicit over time, through the development of inter-governmental agreements and memoranda of understanding, and through a closer working relationship among staff of each local government.

The most outstanding example of cooperation relates to the administration of the five separate utilities. Since 2001, when the utilities went into effect, the County has provided administrative services, including billing, billing data maintenance, and customer service, in exchange for a small portion of the fee revenues for each underlying jurisdiction.

The County has historically been a significant service provider for drainage maintenance activities to each of the underlying jurisdictions, offering a menu of drainage infrastructure cleaning, maintenance, and repair activities at hourly rates. The patchwork nature of the jurisdictional boundaries lends itself to a cooperative approach to these activities whenever possible to maximize efficiencies in equipment and staff time.

Three of the five jurisdictions participating in the regional stormwater utility have recently been permitted as a municipal separate storm sewer system (MS4) and become regulated under a National Pollutant Discharge Elimination System (NPDES) MS4 permit. These permits require strict management of activities that impact the quality of stormwater runoff, such as construction and industrial activities,

as well as significant goals of public education and outreach in order to bolster the general public's ability to and interest in managing stormwater runoff responsibly.

Under the new permits, the jurisdictions will be required to perform maintenance activities on existing stormwater drainage infrastructure (as is done now), monitor water quality at outfalls, inspect facilities and infrastructure, and provide education and outreach to citizens. The costs for these activities can be limited if they are performed in coordination between jurisdictions, either across the entire county or in more geographically distinct regions (such as North of the Broad River).

Utility background

Each of the five jurisdictions has a separate stormwater utility, established by separate ordinance, allowing the jurisdiction to collect revenues dedicated to stormwater management activities. As mentioned above, each jurisdiction cooperates in the administration of the utility by funding a portion of the County staff and material costs, effectively creating a regional utility.

At the inception of the regional utility in 2001, each property was charged a stormwater fee (conveyed on the annual tax bill) based on the size of the property and a runoff factor associated with that type of property. At this time, all five jurisdictions were charging the same rate, such that a similar property in any jurisdiction would pay the same annual fee. By 2005, the County had access to aerial photography that allowed for a more reliable approach to fee calculation. Rather than use tabular property characteristics to develop the fee for an individual property, the fee could be calculated based on one characteristic that was deemed an important cost driver: impervious surface area. Some elements of the previous rate structure remained intact, but for developed properties, the utility replaced their existing rate structure with one based on impervious surface area as measured from aerial photography.

At its core, this is an industry standard approach to calculating stormwater fees. However, the data available to the County in 2005 were already several years out of date and of relatively poor quality (see Figure 1 below). In recent years, the County has been able to obtain much higher quality imagery on an annual basis and has been updating its impervious area measurements, the foundational billing data, as properties change.

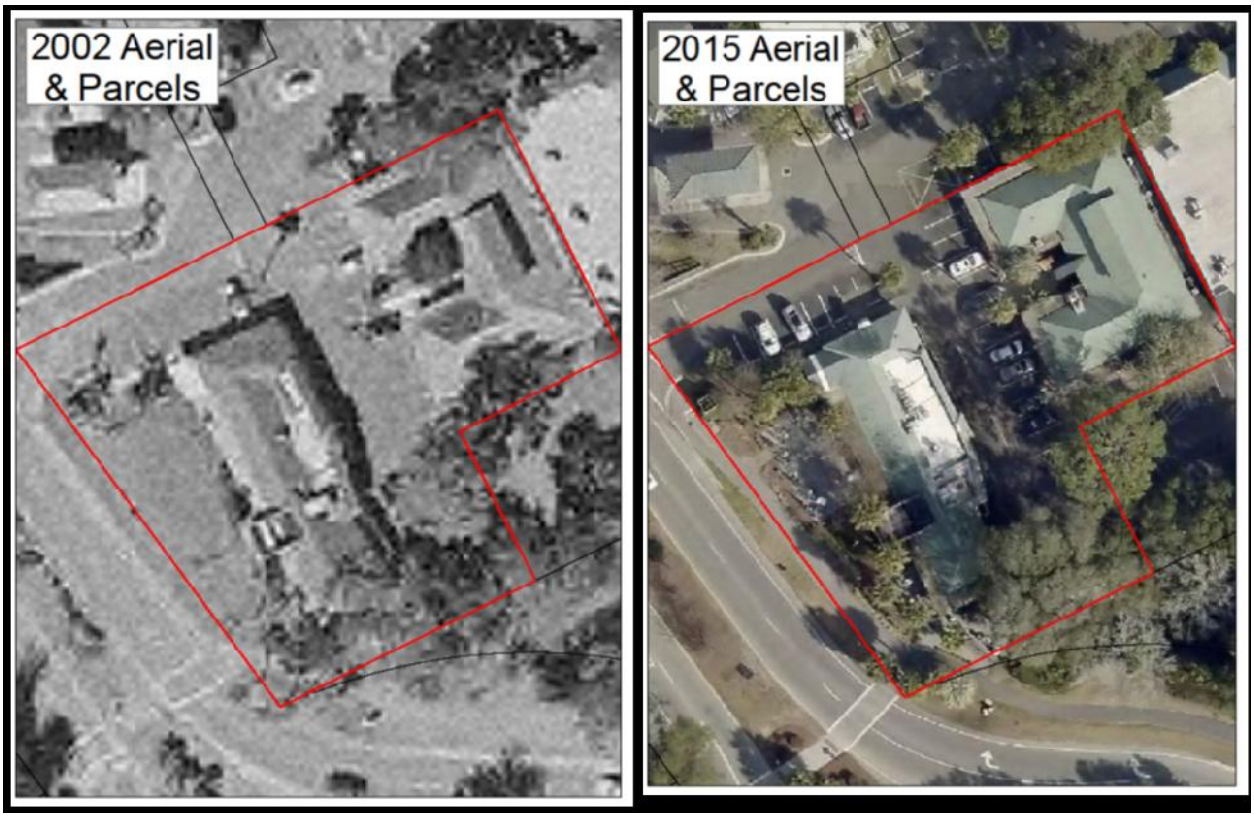


Figure 1. Comparison of 2002 and 2015 Aerial Photography

Current Stormwater Utility Structure

Rate Structure

As defined by the ordinances passed in 2005, the jurisdictions share a rate structure, though each is allowed to charge rates necessary to generate the revenue needed within each individual jurisdiction. The current rate structure has three distinct parts: residential properties, nonresidential properties, and vacant lands. Because the stormwater fee is conveyed on the tax bill and the data should be related, every property falls into one of these three categories depending on its classification in the tax system. Generally, the basis for the rate is the amount of runoff a property generates, whether that be the result of impervious area or some other driver.

At the time of the last rate base and rate structure analysis, the median impervious surface area on single family residential properties was 4,906 square feet. This became the base unit (single family unit or SFU) for measuring impervious area on other types of properties as well. For property types within the tax system that have **residential** classifications, each equates to a distinct SFU equivalency factor in three "tiers." Residential property with 2,521 square feet or less of impervious area is tier 1. Tier 3 is residential property with 7,266 square feet or more of impervious area, and all residential property between these two impervious measures is tier 2. The tier equivalent SFU factor is multiplied by the per SFU rate for encompassing jurisdiction results in the rate. This concept is called simplified residential rates and is recommended in the newly modeled rate structures described in this study. The residential property types and SFU equivalencies are as follows:

Property Type	Equivalent SFUs
Tier 1 Single Family Unit (≤2,521 square feet)	0.50
Tier 2 Single Family Unit (2,522 to 7,265 square feet)	1.00
Tier 3 Single Family Unit (≥7,266 square feet)	1.50
Mobile Home	0.36
Apartment	0.39
Townhouse	0.60
Condominium	0.27

Where a single property includes multiple residential units, the equivalent SFU is per unit, such that an apartment complex property with 100 units would be charged for 0.39 (SFUs per unit) times 100 (number of units) times the rate to calculate the final fee.

Nonresidential properties represent the simplest of area of the current rate structure. For every property not classified as residential or vacant in the tax system, the stormwater fee is calculated based on the amount of impervious surface area on that property. This amount, divided by the 4,906 square foot SFU and multiplied by the per SFU rate, results in the final fee. There is no rounding or other manipulation of data.

Finally, **vacant** lands are presumed to have no impervious area, and are therefore not charged on that basis. They do still have an impact on the stormwater system, however, and should be responsible for a portion of the costs. At present, the rate structure allows for 'runoff factors' to be applied to vacant lands, with different factors used depending on a matrix of classification including whether a property is classified as agriculture, forestry, disturbed, or undisturbed.

Business Processes

In addition to the documented rate structure, there exist a number of business processes that have been developed over time to facilitate utility administration. Most of these processes are in line with the current ordinance but some have evolved to address data collection and maintenance difficulties that emerged from the existing rate structure. These include:

- the treatment of golf courses and parks as vacant land when in fact they may have a good deal of impervious area
- treatment of multi-use parcels (such as house and forested area on the same lot) as separate parcels with summed fees
- granting stormwater best management practices credit by overriding a property's fee to 1 SFU

During the course of these studies, the ATM team worked to identify any divergent business processes and compute updated metrics for the affected properties.

Rates

With the same rate structure in place since 2005, each jurisdiction has experienced increased revenue requirements and subsequently higher rates over time. Table 1 is a summary of each jurisdiction's rate history per SFU over time.

Table 1. Stormwater Fee Rates over Time

	2005-2006	*2007*	*2008*	*2009*	*2010*	*2011*	*2012-2014*
Beaufort County	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
City of Beaufort	$ 44.43	$ 44.43	$ 44.43	$ 44.43	$ 65.00	$ 65.00	$ 105.00
Town of Port Royal	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
Town of Bluffton	$ 49.00	$ 49.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00
Town of Hilton Head Island	$ 44.43	$ 50.76	$ 50.76	$ 83.23	$ 108.70	$ 108.70	$ 108.70

Beaufort County Stormwater Program

Beaufort County's stormwater program serves as the backbone for the programs in the other jurisdictions. The County has historically been financially responsible for maintenance and repair on county-wide infrastructure on and off County road rights of way, even within the municipal boundaries of underlying jurisdictions.

More recently, the County has become unable to adequately provide stormwater services throughout the entirely of the unincorporated county with the available funds. That is, maintenance activities in parts of the county, especially those pockets within other jurisdictions, have been neglected in favor of addressing needs that could be met more economically. The City and Towns have not been receiving the stormwater management services they have come to expect from the County, those the County also endeavors to provide, because of funding shortfalls.

The County is in a unique position in that its unincorporated area or its stormwater revenue base, is shrinking due to annexation, while its costs are still increasing. A notable portion of these costs are associated with managing water quality and drainage in rapidly growing regions just outside the underlying jurisdictional boundaries. Historically, some of these areas have been annexed into the adjacent Town or City. The County has continued to provide stormwater services as best possible in these areas but has not been able to keep up with the maintenance and repair needed.

There are a number of capital projects that have been identified by the County for completion in the next several years. While these are currently in unincorporated areas, they are either near to or surrounded by the municipalities such that the benefit is conferred well beyond the unincorporated region.

For these reasons and the new requirements soon to be imposed by the MS4 permit, the County has rapidly increasing costs paired with a declining revenue base. In recognition of this, the County was facing an enormous rate increase. Rather than simply adjust the rates in the unincorporated region, the County initiated a dialog with the City and Towns to discuss the growing county-wide infrastructure operation and maintenance needs. The jurisdictions began exploring a more collaborative and equitable approach to sharing the costs (and receiving the benefits) of these services.

Rate Study Approach

The ATM team was contracted to assist Beaufort County Stormwater (County) with a detailed stormwater utility rate study. For the unincorporated County and each of the four municipalities, the team conducted a full accounting of planned stormwater program costs over the next five years, which are expected to increase driven by the combination of existing operations and maintenance activities, a significant capital project backlog, and emerging NPDES compliance needs. The rate study was performed concurrent with the budgeting process for the fiscal year that began July 1, 2015, and resulted in the development and consideration of a number of rate structure options, described below.

Goals

The primary goal of the rate study was to model financially sufficient scenarios to support the jurisdictions' current and future stormwater programs. This included the following supporting objectives:

1. Determine the current and future (from MS4 compliance, jurisdictional growth, etc.) revenue requirements of each program;
2. Determine the most fair and reasonable way to recover revenues while balancing data maintenance efforts;
3. Facilitate future program visioning; and
4. Account for potential future collaboration and shared costs.

Through numerous meetings, extensive model development and refinement, and collaborative review of the results, the team and the project remained accountable to these goals throughout the process.

Modeling

The primary deliverable from the rate study is a model that was developed to compare and contrast different financial scenarios for each of the jurisdictions. The model balances revenue requirements with funding from the stormwater fee and other possible sources. On the revenue requirements side, for each jurisdiction the ATM team considered existing revenue requirements, future MS4 permit related expenses, and capital needs. Revenue was modeled as the resulting revenue from several different rate structures as well as supplemental resources from bond issuances or other sources. With that basic structure in place, the model was refined to allow for allocation of costs across jurisdictions and rate components (see below for more information) in order to optimize rate equity.

The finalized model will be made available to each jurisdiction for ongoing use as a financial planning tool.

Data update

Much of the impervious area data originally developed for the 2005 rate study was created using low-quality 2002 aerial imagery. With the possible shift in rates and rate structure, it was critical to have improved source data. As a part of the rate study, the ATM team conducted a targeted review update (where needed) of approximately 5,000 parcel polygons within the GIS and across all of the jurisdictions in order to update the rate base.

At the conclusion of the effort, RFC reviewed and updated the impervious features as necessary on a total of 5,937 parcel polygons, deriving the features using the newest available imagery from 2013.

Rate Components

Fixed Costs

Many costs associated with the administration of the utility have little to do with specific characteristics of the land. Rather, they represent a public service to which each property owner (account holder) has equal access. Billing and collections, data management and updating, programming, and customer support may fall within this category. These costs, then, are distributed evenly to each account holder by being allocable to a fixed charge per parcel.

Variable Costs: Impervious Surfaces Area and Gross Parcel Area

Impervious area is the area of land covered by a hard surface through which rainwater cannot pass, such as building footprints and parking lots. The amount of impervious area on a parcel is most directly related to the quantity of stormwater to be handled by the system. For bare soil and vegetated ground cover, some water will infiltrate into the ground—even during heavy rain—rather than run across the surface. For impervious surfaces, on the other hand, water cannot infiltrate into the ground. For that reason, impervious surface causes the peak discharge volume of runoff from a parcel of land to be higher than it would otherwise. Regardless of how the land is managed, runoff tends to gather nutrients and other potential pollutants. Because virtually none of this runoff (and the pollutants it carries) soaks into the ground, runoff from impervious area carries a greater volume of harmful materials toward receiving waterbodies than pervious area.

One unique aspect of the stormwater utilities in these jurisdictions is the wide variety of land use represented within each jurisdiction. Gross area is included as a component of the stormwater fee to capture the costs not solely related to impervious area runoff. As opposed to impervious area, gross land area contributes proportionately more to the nutrients and pollutants that stormwater runoff may pick up and less to the sheer volume of runoff to be managed. As discussed, pervious land can absorb some of the water that falls on it, so it does not contribute as much to runoff. However, pervious land still contributes pesticides, fertilizers, leaves, and other undesirable materials to the runoff that does occur. As such, stormwater costs related to water quality and quantity (most O&M costs) are allocable in some portion to gross land area.

In the costs described below, allocability to impervious area and gross area represents a relationship between a particular cost and the demand for that cost caused by a higher volume of stormwater (including higher levels of pollution) to be managed. An impervious and gross area rate structure allocates some cost to each of the two variables, in this case either allocating 80% or 90% of the variable costs to impervious area, and the remaining costs to gross area. The gross area units would include a declining block, such that large properties have more units of gross area than small properties, but the increase in units of gross area as overall parcel size increase are blunted by the declining block.

Cost Allocability

The proposed rate structures take into account a number of costs that vary by:

- Who provides the service,
- Who receives the service, and
- What drives the cost of the service (the existence of an account, impervious area or gross area)

This section describes the different elements of the jurisdictions' and utility's program costs and how they may be accommodated in the rate structures. The resulting modeled rates for each jurisdiction take into account the distribution of costs across all jurisdictions based on the chosen allocation scheme, and the particular rate base of that jurisdiction.

Jurisdictional Infrastructure O&M

Each of the five jurisdictions maintains its own stormwater drainage infrastructure and funds those costs from utility revenue. These costs are driven by impervious area and gross area in the jurisdiction, which contribute to stormwater runoff and nutrient loading. As such, the impervious and/or gross area component of the fee will include these costs. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Jurisdiction Capital Projects

Each of the five jurisdictions has an independent capital plan, and can determine whether bond funding or pay as you go funding (or paying with available unencumbered funds) is appropriate or necessary. Capital financing has been "pay-as-you-go" for most jurisdictions. An alternative is for jurisdictions to borrow money to build capital projects and pay this back over time. This option is described in the definitions as debt.

The cost drivers for capital projects are similar to those for regular O&M, and are allocable to impervious and gross area within a jurisdiction. Debt service (in the case of bond funding) or cash contributions to capital projects are included in the impervious and/or gross area components of a fee. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Debt

For some of the jurisdictions, capital needs outpace the funds available through fee revenue. Issuing debt in the form of revenue bonds is a viable alternative to fund these projects, and in some cases may be the most appropriate option. Debt financing is appropriate for large physical assets with long expected lives, generally constructed improvements. Most notable, debt service creates a mechanism for future ratepayers to help fund the infrastructure from which they still benefit. The exceptional environmental quality found in this region is one of the primary reasons people choose to live and work here, and at its most basic, every investment made in capital projects supports that fundamental tenet. Through debt funding of capital projects, ratepayers of the future can pay back into the program that promotes this high quality of life.

Revenue bonding will not affect a jurisdiction's existing covenants or caps. With revenue bonds, the jurisdiction's stormwater utility will be solely responsible for servicing that debt, and there is no risk to the greater entity.

County-wide Infrastructure O&M

The County maintains some larger drainage infrastructure within each of the four municipalities in addition to drainage infrastructure within the unincorporated area. County-wide infrastructure (defined as pipes and open ditches both in and out of rights of way that are owned or maintained by the County) maintenance costs have not been allocated to any ratepayers outside the unincorporated County to date. That is, revenue from fees charged to property owners in the unincorporated County have been funding infrastructure maintenance, repair, and replacement activities throughout all five jurisdictions.

Currently, these activities have been limited in the incorporated areas because funding levels, supported by the unincorporated ratepayers only, are insufficient. The modified rate structure will share the County's costs for County-wide infrastructure maintenance across all the unincorporated and incorporated areas of the County based on linear feet of pipes and open ditches in each jurisdiction.

The cost drivers for operation and maintenance of county infrastructure are very similar to those for the various jurisdictional stormwater infrastructure systems. These costs may be recovered through an impervious and/or gross area fee component, the revenue from which supports County efforts. Revenue from this fee component would be returned to the service provider, the County.

The County's total budgeted County-wide infrastructure operation and maintenance cost is approximately $3.5 million in FY2015-2016. A detailed analysis of the proportions of this County-wide infrastructure was prepared in 2015 by the County, and was used as the basis for the cost allocations to unincorporated areas of the County and to the municipalities. This inventory was conducted in GIS data layers and was made available to all jurisdictions by the County as part of this study. The analysis shows the proportions to be:

Unincorporated County	83.6%
City of Beaufort	2.2%
Town of Port Royal	0.8%
Town of Bluffton	7.6%
Town of Hilton Head Island	5.8%

Based on this proportional breakdown, the County intends to convey a separate charge (as a new line on the bill, not to be added to or combined with the City/Towns fees), that bills this amount per SFU or IA/GA unit, as the rate structure would require. Final fee amounts are discussed in the Modified Rate Structure section, below.

Utility Administration

The County administers the cooperative utility for each of the five jurisdictions. Currently administrative fees are allocated across the impervious area rate base such that properties with a large number of SFUs of impervious area pay more in administrative fees than those with fewer SFUs.

Costs for this effort may be allocable to either the number of parcels or accounts for which data must be maintained, customer service must be provided, etc. These costs may instead be recovered via a fixed charge component charged to all utility customers. Alternatively, costs could be allocable to the impervious and/or gross area fee component if they are more closely related to the effort of maintaining the geospatial data or researching and addressing detailed questions from large, complex customers. Revenue from this fee component would be returned to the service provider, the County.

MS4 Compliance

The County will be subject to MS4 permit requirements beginning in late 2015. Some program elements are fulfilled by each individual jurisdiction while others are provided cooperatively. Any existing inter-governmental agreements and Memoranda of Understanding (MOU) may need to be revised if an alternate structure is chosen.

Individual Efforts

Other MS4 permit compliance activities may be done separately by each jurisdiction, and provided only to that jurisdiction. These costs are allocable to the impervious and/or gross area fee component and revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Cooperative Efforts

Monitoring

The County currently provides monitoring efforts within the jurisdictions boundaries of the municipalities. This relationship could be expanded to other jurisdictions if desired. These costs would be driven by the number of accounts and would be included in the fixed charge component of the fee, only in the jurisdictions where the County provides this monitoring service. Revenue from this fee component would be returned to the service provider, the County.

Public Education/Outreach

Currently, the jurisdictions participate in a cooperative public education and outreach scheme. Rather than implement separate agreements between each jurisdiction, this cost can be considered a per account cost and included in the fixed charge component of the fee, applicable to everyone in the County. Revenue from this fee component would be returned to the service provider, the County.

Modeled Options

Elements of Six Rate Structure Options

Simplified residential rate: Charge one of a series of flat rates, based on SFUs, to different classes of residential properties. This is how residential rates work in the current rate structure.

Continued application of the agricultural use policy: Properties legally under certain agricultural uses have limits placed on their stormwater fees by state law. The rate structure options will continue to follow this approach.

Updated source data: RFC reviewed and updated as necessary 5,937 parcel polygons with the newest available imagery from 2013. The results of this update were used to model both the modified rate structure options and the current rate structure options, which make use of the newly measured impervious features.

Minimum charge: A minimum charge is a rate structure feature whereby once the amount a property owes in annual stormwater fees is computed it is compared to the minimum charge and if less, the minimum charge is applied to the property. The minimum charge is set to reflect the minimum amount of demand a property can actually place on the jurisdiction providing service. The minimum charge is represented as a fixed fee component and is charged to every property.

Options

A. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; pay-as-you-go capital financing

B. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; debt financing for some capital projects

C. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per-account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

D. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

E. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

F. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

Alternative Cost Sharing Approach

As an alternative to the modeled county-wide infrastructure charge, each underlying jurisdiction can work individually with the County to establish a level of service and cost for providing that service within the jurisdiction. Each jurisdiction is entitled to convey that fee to its customers in any reasonable manner, but must remit the appropriate amount to the County to receive the agreed upon services.

Table 2. Modeled Rate Structure Options

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

Modified Rate Structure

ATM modeled four of the six options based on a modified rate structure design that relies more heavily on measured impervious area data but retains the basic backbone of the existing rate structure.

Fee Structure

The recommended fee includes three components: a fixed component to convey costs allocable by account, and two variable components: one based on gross area and one based on impervious area, to convey the costs that vary by property characteristic. With the exception of those explicitly exempt, every real property (which in some cases does not include land on the ground) has a stormwater fee calculated for it.

Bill Class

Every property falls into one of several bill classes, which determine fee calculation for that property. Residential properties are treated in a similar manner as they are currently, with SFU equivalents to represent the impervious area on each type of residential property. Gross area and fixed fee components are added to this portion of the residential fee. Vacant property is not charged for any impervious area, measured or assumed. It is, however, charged for the gross land area of the parcel and the fixed component of the fee, as described below. Agricultural properties in the County are excluded from any fee changes by State law, and as such represent their own category of properties for which the current fee is carried forward. Exempt parcels are not charged any portion of the fee. Finally, all other properties are considered non-residential, non-vacant properties (herein called “commercial”), which are charged a per unit rate for impervious area, along with a fixed fee and gross area charge.

Rate Structure Design

Impervious Area Units

The existing impervious area unit of 4906 has been retained for maximum equity between residential and commercial bill classes in impervious area charge. Residential properties are charged for impervious area based on the factors existing in the current rates structure. Commercial properties are charged per 4,906 square feet unit, or part thereof, of impervious area. Under the modified rate structure design, 80% of variable costs are funded through impervious area charges.

Gross Area Blocks

A gross area fee component is included for all properties that have a real parcel and parcel area found in GIS. The gross area charge is calculated in equivalent units as follows:

- Every property is charged $X for the first 2 acres of gross area. This means that every property getting a gross area fee is charged at least $X.
- For every acre above 2 acres, and up to 10 acres, the property is charged .5*$X per acre.
- For every acre above 10 acres, and up to 100 acres, the property is charged .4*$X per acre.
- For every acre above 100 acres, the property is charged .3*$X per acre.

This declining block structure maintains the important rate base of large properties. Under the modified rate structure design, 20% of variable costs are funded through gross area charges.

Exempt Properties and Special Cases

The modified rate structure design mirrors the current rate structure in exempt properties. Roads, railroads, private roads, and boat slip properties are exempt from stormwater fees. As described above, vacant (undeveloped) parcels are not exempt from the entire fee, but are not charged for the impervious area fee component.

Credit

For properties receiving credit for BMPs, that credit can be carried forward in this modified rate structure.

Rate Study Results

ATM developed a spreadsheet-based rate model tool to model the way the individual jurisdiction and County-wide costs impact rates. The comprehensive model can be manipulated to calculate rates for each of the six options described above, as well as allow for manual override of the calculated rates to predict the revenue generation and sufficiency of a particular rate structure and rate choice.

Beaufort County

For the unincorporated County, Option E (see appendix A) results in rates for a fixed charge, an impervious area charge, and a gross area charge. This option would raise the annual charge for an average single family home on a 1 acre lot from the current $50 per year to $87 per year and the rate could be held stable for at least five years. All other options for the County result in less favorable rates. The fee charged to an average house on a one acre parcel in Beaufort County under the six options modeled as part of this rate study are as follows:

	Fiscal Year				
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Option A.2	$100	$100	$100	$110	$120
Option B.2	$95	$95	$95	$95	$95
Option C.2	$87	$99	$99	$99	$112
Option D.2	$90	$100	$100	$100	$119
Option E.2	$87	$87	$87	$87	$87
Option F.2	$90	$90	$90	$90	$92

Therefore, ATM and Utility staff recommend rate structure option E.2 for the County, under which administrative and regulatory compliance charges are allocated on a per account basis, infrastructure O&M costs are allocated based on the impervious and gross area, and two bond sales of $5,000,000 occur in FY 2017 and FY 2019. Because the underlying jurisdictions are unlikely to adopt a rate structure change in the coming fiscal year, the existing $3.18 per (paid) SFU administrative charge that has already been negotiated is retained.

The County is responsible for funding 83.6% of all county-wide infrastructure (CWI) operation and maintenance under the CWI allocation method used. Under the proposed rate structure, this is $45.88 of the total $87.00 annual charge for an average house on a lot smaller than 2 acres. The properties within the four municipalities are responsible for the remaining CWI funding, with the allocation based on the amount of infrastructure to be maintained that falls within each jurisdictional boundary, as described previously. For the next five fiscal years, the CWI funding within each jurisdiction's boundaries on an SFU or IA/GA basis (depending on the rate structures chosen) are:

Table 3. County-wide Infrastructure Cost Breakdown by Jurisdiction

8/18/2015 CWI changes due to revised GIS dataset

	FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
CWI Cost Share on SFU Basis					
Unincorporated County	$ 45.30	$ 46.97	$ 47.50	$ 49.01	$ 49.71
City of Beaufort	$ 5.15	$ 5.74	$ 5.70	$ 5.78	$ 5.76
Town of Port Royal	$ 3.88	$ 4.33	$ 4.30	$ 4.36	$ 4.35
Town of Bluffton	$ 18.13	$ 20.22	$ 20.09	$ 20.38	$ 20.31
Town of Hilton Head Island	$ 5.52	$ 6.15	$ 6.11	$ 6.20	$ 6.18
CWI Cost Share on IA/GA Unit Basis					
Unincorporated County					
per IA Unit	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
per GA Unit	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
City of Beaufort					
per IA Unit	$ 4.10	$ 4.58	$ 4.55	$ 4.61	$ 4.60
per GA Unit	$ 1.34	$ 1.49	$ 1.48	$ 1.51	$ 1.50
Town of Port Royal					
per IA Unit	$ 3.13	$ 3.49	$ 3.47	$ 3.52	$ 3.51
per GA Unit	$ 0.78	$ 0.87	$ 0.87	$ 0.88	$ 0.88
Town of Bluffton					
per IA Unit	$ 17.83	$ 19.89	$ 19.76	$ 20.04	$ 19.97
per GA Unit	$ 2.25	$ 2.51	$ 2.49	$ 2.52	$ 2.52
Town of Hilton Head Island					
per IA Unit	$ 4.39	$ 4.89	$ 4.86	$ 4.93	$ 4.91
per GA Unit	$ 1.43	$ 1.60	$ 1.59	$ 1.61	$ 1.60

In the first planning year, several shared costs (those for the regional stormwater master plan, public education and outreach, and water quality monitoring) are funded via inter-governmental agreements with the responsible parties. In this year only, these are represented as separate revenues and the costs are not allocated to the jurisdictions based on SFU or IA/GA unit calculation.

General Impacts of Rate Structure Changes

The recommended rate structure (Option E.2 if capital intensive, Option C.2 if not) incorporates a fixed charge per account (parcel), plus two variable charges: one for impervious area on the parcel and one for gross parcel area. It also continues the practice of using simplified residential rates for residential properties of varying types from single family detached through condominium units. Because the current billing practices for large undeveloped tracts include an impervious area estimation process while the new rates structures do not charge an impervious area fee if there is no impervious area present, the impervious charges may be divergent between the rate structures. However, the introduction of a gross area charge in the new rate structure modeled largely mimics the fee outcomes.

Using three rate metrics (fixed, impervious area, gross area) allows the fee to have components that relate to cost causation most directly and is generally preferred in utility ratemaking. For example, some administrative costs for billing and collections efforts relate much more to the existence of a bill than to the size of the bill. Paying these costs from an impervious area rate shifts costs to large ratepayers while paying these costs from a fixed charge, as recommended, allocates the costs more equally across all ratepayers.

Needed Ordinance Revisions

County

If a new rate structure is adopted, significant revisions to the County's stormwater utility fee ordinance will be needed. While the revisions are outside the ATM team's scope of work, the team has identified the following categories to focus on:

1. The definitions for residential dwelling classifications and nonresidential properties will need to be revised according to the new rate structure, which does not strictly classify properties according to their land use code in the County tax data.
2. In the definitions and general funding policy section, the rate structure and fee calculation description will need to be updated (refer to Rate Structure Design section above).
3. The stormwater service fee rates for other jurisdictions should be removed and replaced with language that says the County will convey the fees for all jurisdictions until each has transitioned to the revised rate structure. The ordinance should state that the same rate structure will apply for all jurisdictions and should describe how the County will maintain stormwater billing data and conduct other administrative tasks. Once a jurisdiction has transitioned to the new rate structure, the jurisdiction should revise its own ordinance on stormwater service fee rates and execution of utility authority.
4. References to findings from the 2005 rate study should be eliminated or updated to reflect the current findings.

5. References to the stormwater utility's responsibilities and how it is managed will need to be revised to take into account the multijurisdictional nature of the utility and any changes to the way funding (especially for county-wide drainage infrastructure) occurs. The revisions can be based on current inter-governmental governmental agreements with the City and Towns.
6. After each jurisdiction transitions to a revised rate structure, the references to inter-governmental agreements on administrative fees in the County ordinance can be replaced with details on the actual fee component.

Ongoing Billing Data Maintenance

Data maintenance processes for stormwater utility fee billing are crucial to enabling accurate and timely reporting and customer service. Parcel data from the five jurisdictions should be integrated and kept as current as possible for use in determining properties that are billable for the stormwater fee. A GIS layer representing impervious surfaces should be updated regularly in response to development, demolition, and recognition of incorrect data. Other County data sources such as building permit applications and changes in improvement values can also be utilized as triggers to begin or update stormwater billing.

The ATM team will provide technical guidance on data maintenance in a separate memorandum that will go into detail on digitization and GIS processes, triggers for new or changed development, and other processes for keeping stormwater billing data current.

Appendix A – Beaufort County Recommended Rates (Options A.2-F.2)

Beaufort County
Summary Sheet

Option A.2 - 8/18/2015 CWI changes due to revised GIS dataset

		FY 2015-2016 Current RS	FY 2016-2017 Current RS	FY 2017-2018 Current RS	FY 2018-2019 Current RS	FY 2019-2020 Current RS
Rate Base						
1.00%	Accounts	65,314	65,967	66,627	67,293	67,966
-0.50%	Billable IA Units	54,388	54,116	53,845	53,576	53,308
-1.00%	Billable Equivalent GA Units	104,545	103,500	102,465	101,440	100,426
Costs						
	Administration (50250012)	$ 360,495	$ 363,725	$ 368,737	$ 373,179	$ 379,546
	County Portion: Administration	$ 183,255	$ 148,378	$ 150,699	$ 152,416	$ 156,023
	Regulatory Compliance (50250013)	$ 620,242	$ 687,847	$ 635,754	$ 669,218	$ 695,872
	County Portion: Regulatory Compliance	$ 583,300	$ 623,693	$ 574,254	$ 610,371	$ 637,025
	County-Wide Infrastructure O&M (50250011)	$ 3,492,833	$ 3,407,621	$ 3,428,602	$ 3,520,449	$ 3,552,600
	County Portion: County-Wide Infrastructure	$ 2,760,277	$ 2,847,391	$ 2,864,922	$ 2,941,668	$ 2,968,534
	Capital Purchases & Projects	$ 1,636,609	$ 2,079,320	$ 1,662,460	$ 1,585,000	$ 3,194,460
	Total County Costs (excl. debt service)	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total County Costs excl. Shared Services Payable by Others (excl. debt service)	$ 5,163,441	$ 5,698,782	$ 5,252,334	$ 5,289,455	$ 6,956,042
Debt Service						
	Annual Debt Service	$ -	$ -	$ -	$ -	$ -
	Coverage Goal	1.30	1.30	1.30	1.30	1.30
	Actual Coverage					
Current RS Fee Alternative						
	Impervious Area Units	60,927	60,622	60,319	60,017	59,717
	Fee	$ 100.00	$ 100.00	$ 100.00	$ 110.00	$ 120.00
	Countywide Infrastructure Charge	$ 45.30	$ 46.97	$ 47.50	$ 49.01	$ 49.71
	Override Countywide Infrastructure Charge	$ -	$ -	$ -	$ -	$ -
	Anticipated Unincorporated County Fee Billings	$ 6,092,675	$ 6,062,211	$ 6,031,900	$ 6,601,915	$ 7,166,079
	Collection Factor	94%	94%	94%	94%	94%
Revenues						
	Anticipated Unincorp County Fee Revenue	$ 5,727,114	$ 5,698,479	$ 5,669,986	$ 6,205,800	$ 6,736,114
	Anticipated Revenue from other Jurisdictions					
	Administrative Fee	$ 177,240	$ 215,346	$ 218,038	$ 220,764	$ 223,523
	Regulatory Compliance	$ -	$ 64,154	$ 61,500	$ 58,847	$ 58,847
	Countywide Infrastructure Maintenance	$ -	$ -	$ -	$ -	$ -
	Current Shared Services IGA for SMP Update	$ 236,409				
	Current Shared Services IGA for WQ Monitoring & PE/PO	$ 36,942				
	Interest	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
	Project Cost Shares	$ 2,771				
	Bond Issuance Proceeds	$ -	$ -	$ -	$ -	$ -
Fund Balance						
	FY Beginning Fund Balance	$ 434,079	$ 506,876	$ (51,158)	$ (194,686)	$ 145,379
	Total Costs	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total Revenues	$ 6,182,976	$ 5,980,479	$ 5,952,025	$ 6,487,911	$ 7,020,984
	Surplus (Deficit)	$ 72,797	$ (558,034)	$ (143,528)	$ 340,065	$ (801,494)
	FY End Fund Balance	**$ 506,876**	**$ (51,158)**	**$ (194,686)**	**$ 145,379**	**$ (656,115)**

Beaufort County
Summary Sheet
Option B.2 - 8/18/2015 CWI changes due to revised GIS dataset

		FY 2015-2016 Current RS	FY 2016-2017 Current RS	FY 2017-2018 Current RS	FY 2018-2019 Current RS	FY 2019-2020 Current RS
Rate Base						
1.00%	Accounts	65,314	65,967	66,627	67,293	67,966
-0.50%	Billable IA Units	54,388	54,116	53,845	53,576	53,308
-1.00%	Billable Equivalent GA Units	104,545	103,500	102,465	101,440	100,426
Costs						
	Administration (50250012)	$ 360,495	$ 363,725	$ 368,737	$ 373,179	$ 379,546
	County Portion: Administration	$ 183,255	$ 148,378	$ 150,699	$ 152,416	$ 156,023
	Regulatory Compliance (50250013)	$ 620,242	$ 687,847	$ 635,754	$ 669,218	$ 695,872
	County Portion: Regulatory Compliance	$ 583,300	$ 623,693	$ 574,254	$ 610,371	$ 637,025
	County-Wide Infrastructure O&M (50250011)	$ 3,492,833	$ 3,407,621	$ 3,428,602	$ 3,520,449	$ 3,552,600
	County Portion: County-Wide Infrastructure	$ 2,760,277	$ 2,847,391	$ 2,864,922	$ 2,941,668	$ 2,968,534
	Capital Purchases & Projects	$ 1,636,609	$ 2,079,320	$ 1,662,460	$ 1,585,000	$ 3,194,460
	Total County Costs (excl. debt service)	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total County Costs excl. Shared Services Payable by Others (excl. debt service)	$ 5,163,441	$ 5,698,782	$ 5,252,334	$ 5,289,455	$ 6,956,042
Debt Service						
	Annual Debt Service	$ -	$ 146,185	$ 292,371	$ 438,556	$ 584,741
	Coverage Goal	1.30	1.30	1.30	1.30	1.30
	Actual Coverage		8.46	4.23	2.46	1.69
Current RS Fee Alternative						
	Impervious Area Units	60,927	60,622	60,319	60,017	59,717
	Fee	$ 95.00	$ 95.00	$ 95.00	$ 95.00	$ 95.00
	Countywide Infrastructure Charge	$ 45.30	$ 46.97	$ 47.50	$ 49.01	$ 49.71
	Override Countywide Infrastructure Charge	$ -	$ -	$ -	$ -	$ -
	Anticipated Unincorporated County Fee Billings	$ 5,788,041	$ 5,759,101	$ 5,730,305	$ 5,701,654	$ 5,673,146
	Collection Factor	94%	94%	94%	94%	94%
Revenues						
	Anticipated Unincorp County Fee Revenue	$ 5,440,759	$ 5,413,555	$ 5,386,487	$ 5,359,555	$ 5,332,757
	Anticipated Revenue from other Jurisdictions					
	Administrative Fee	$ 177,240	$ 215,346	$ 218,038	$ 220,764	$ 223,523
	Regulatory Compliance	$ -	$ 64,154	$ 61,500	$ 58,847	$ 58,847
	Countywide Infrastructure Maintenance	$ -	$ -	$ -	$ -	$ -
	Current Shared Services IGA for SMP Update	$ 236,409				
	Current Shared Services IGA for WQ Monitoring & PE/PO	$ 36,942				
	Interest	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
	Project Cost Shares	$ 2,771				
	Bond Issuance Proceeds	$ -	$ 5,000,000	$ -	$ 5,000,000	$ -
Fund Balance						
	FY Beginning Fund Balance	$ 434,079	$ 220,520	$ 4,231,377	$ 3,511,979	$ 7,567,243
	Total Costs	$ 6,110,180	$ 6,684,698	$ 6,387,923	$ 6,586,402	$ 8,407,219
	Total Revenues	$ 5,896,621	$ 10,695,555	$ 5,668,526	$ 10,641,665	$ 5,617,627
	Surplus (Deficit)	$ (213,559)	$ 4,010,857	$ (719,398)	$ 4,055,264	$ (2,789,592)
	FY End Fund Balance	**$ 220,520**	**$ 4,231,377**	**$ 3,511,979**	**$ 7,567,243**	**$ 4,777,650**

Beaufort County
Summary Sheet

Option C.2 - 8/18/2015 CWI changes due to revised GIS dataset

		FY 2015-2016 Revised RS	FY 2016-2017 Revised RS	FY 2017-2018 Revised RS	FY 2018-2019 Revised RS	FY 2019-2020 Revised RS
Rate Base						
1.00%	Accounts	65,314	65,967	66,627	67,293	67,966
-0.50%	Billable IA Units	54,388	54,116	53,845	53,576	53,308
-1.00%	Billable Equivalent GA Units	104,545	103,500	102,465	101,440	100,426
Costs						
	Administration (50250012)	$ 360,495	$ 363,725	$ 368,737	$ 373,179	$ 379,546
	County Portion: Administration	$ 183,255	$ 148,378	$ 150,699	$ 152,416	$ 156,023
	Regulatory Compliance (50250013)	$ 620,242	$ 687,847	$ 635,754	$ 669,218	$ 695,872
	County Portion: Regulatory Compliance	$ 583,300	$ 639,616	$ 589,928	$ 625,797	$ 652,451
	County-Wide Infrastructure O&M (50250011)	$ 3,492,833	$ 3,407,621	$ 3,428,602	$ 3,520,449	$ 3,552,600
	County Portion: County-Wide Infrastructure	$ 2,760,277	$ 2,847,391	$ 2,864,922	$ 2,941,668	$ 2,968,534
	Capital Purchases & Projects	$ 1,636,609	$ 2,079,320	$ 1,662,460	$ 1,585,000	$ 3,194,460
	Total County Costs (excl. debt service)	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total County Costs excl. Shared Services Payable by Others (excl. debt service)	$ 5,163,441	$ 5,714,705	$ 5,268,009	$ 5,304,881	$ 6,971,468
Debt Service						
	Annual Debt Service	$ -	$ -	$ -	$ -	$ -
	Coverage Goal	1.30	1.30	1.30	1.30	1.30
	Actual Coverage					
Revised RS Stormwater Fee						
	Fixed Cost per Account, Calc	$ 11.74	$ 12.44	$ 11.66	$ 12.15	$ 12.53
	Fixed Cost per Account, admin portion:	$ 2.81	$ 2.74	$ 2.80	$ 2.84	$ 2.93
	Fixed Cost per Account, regulatory compliance portion:	$ 8.93	$ 9.70	$ 8.85	$ 9.30	$ 9.60
	Fixed Cost per Account, CWI portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost Collection Rate	91%	92%	94%	94%	94%
	Fixed Cost per Account, Override	$ 12.00	$ 14.00	$ 14.00	$ 14.00	$ 14.00
	Variable Costs, IA Proportion	80%	80%	80%	80%	80%
	Variable Costs, GA Proportion	20%	20%	20%	20%	20%
	Variable Costs, IA Unit Fee Calc	$ 64.68	$ 72.84	$ 67.27	$ 67.60	$ 92.49
	Variable Costs, IA Unit Fee, administrative portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, IA Unit Fee, reg compliance portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, IA Unit Fee, CWI portion:	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
	Variable Costs, IA Unit Fee, Other County costs portion:	$ 24.07	$ 30.74	$ 24.70	$ 23.67	$ 47.94
	IA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, IA Unit Fee Override	$ 65.00	$ 75.00	$ 75.00	$ 75.00	$ 86.00
	Variable Costs, GA Unit Fee Calc	$ 8.42	$ 9.53	$ 8.84	$ 8.93	$ 12.28
	Variable Costs, GA Unit Fee, administrative portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, GA Unit Fee, reg compliance portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, GA Unit Fee, CWI portion:	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
	Variable Costs, GA Unit Fee, Other County costs portion:	$ 3.13	$ 4.02	$ 3.24	$ 3.13	$ 6.36
	GA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, GA Unit Fee Override	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 12.00
	Anticipated Unincorp County Fee Billings	$ 5,364,442	$ 6,017,238	$ 5,995,803	$ 5,974,702	$ 6,741,124
Revenues						
	Anticipated Unincorp County Fee Revenue	$ 4,881,642	$ 5,535,859	$ 5,636,055	$ 5,616,220	$ 6,336,657
	Anticipated Revenue from other Jurisdictions					
	Administrative Fee	$ 177,240	$ 215,346	$ 218,038	$ 220,764	$ 223,523
	Regulatory Compliance	$ -	$ 48,230	$ 45,825	$ 43,421	$ 43,421
	Countywide Infrastructure Maintenance	$ 496,148	$ 560,231	$ 563,680	$ 578,780	$ 584,066
	Current Shared Services IGA for SMP Update	$ 236,409				
	Current Shared Services IGA for WQ Monitoring & PE/PO	$ 36,942				
	Interest	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
	Project Cost Shares	$ 2,771				
	Bond Issuance Proceeds	$ -	$ -	$ -	$ -	$ -
Fund Balance						
	FY Beginning Fund Balance	$ 434,079	$ 157,551	$ (18,795)	$ 351,750	$ 665,589
	Total Costs	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total Revenues	$ 5,833,651	$ 6,362,167	$ 6,466,099	$ 6,461,684	$ 7,190,167
	Surplus (Deficit)	$ (276,528)	$ (176,346)	$ 370,546	$ 313,839	$ (632,311)
	FY End Fund Balance	**$ 157,551**	**$ (18,795)**	**$ 351,750**	**$ 665,589**	**$ 33,277**

Beaufort County
Summary Sheet

Option D.2 - 8/18/2015 CWI changes due to revised GIS dataset

		FY 2015-2016 Revised RS	FY 2016-2017 Revised RS	FY 2017-2018 Revised RS	FY 2018-2019 Revised RS	FY 2019-2020 Revised RS
Rate Base						
1.00%	Accounts	65,314	65,967	66,627	67,293	67,966
-0.50%	Billable IA Units	54,388	54,116	53,845	53,576	53,308
-1.00%	Billable Equivalent GA Units	104,545	103,500	102,465	101,440	100,426
Costs						
	Administration (50250012)	$ 360,495	$ 363,725	$ 368,737	$ 373,179	$ 379,546
	County Portion: Administration	$ 183,255	$ 148,378	$ 150,699	$ 152,416	$ 156,023
	Regulatory Compliance (50250013)	$ 620,242	$ 687,847	$ 635,754	$ 669,218	$ 695,872
	County Portion: Regulatory Compliance	$ 583,300	$ 623,693	$ 574,254	$ 610,371	$ 637,025
	County-Wide Infrastructure O&M (50250011)	$ 3,492,833	$ 3,407,621	$ 3,428,602	$ 3,520,449	$ 3,552,600
	County Portion: County-Wide Infrastructure	$ 2,760,277	$ 2,847,391	$ 2,864,922	$ 2,941,668	$ 2,968,534
	Capital Purchases & Projects	$ 1,636,609	$ 2,079,320	$ 1,662,460	$ 1,585,000	$ 3,194,460
	Total County Costs (excl. debt service)	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total County Costs excl. Shared Services Payable by Others (excl. debt service)	$ 5,163,441	$ 5,698,782	$ 5,252,334	$ 5,289,455	$ 6,956,042
Debt Service						
	Annual Debt Service	$ -	$ -	$ -	$ -	$ -
	Coverage Goal	1.30	1.30	1.30	1.30	1.30
	Actual Coverage					
Revised RS Stormwater Fee						
	Fixed Cost per Account, Calc	$ -	$ -	$ -	$ -	$ -
	Fixed Cost per Account, admin portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost per Account, regulatory compliance portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost per Account, CWI portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost Collection Rate	91%	92%	94%	94%	94%
	Fixed Cost per Account, Override	$ -	$ -	$ -	$ -	$ -
	Variable Costs, IA Proportion	80%	80%	80%	80%	80%
	Variable Costs, GA Proportion	20%	20%	20%	20%	20%
	Variable Costs, IA Unit Fee Calc	$ 75.95	$ 84.25	$ 78.04	$ 78.99	$ 104.40
	Variable Costs, IA Unit Fee, administrative portion:	$ 2.70	$ 2.19	$ 2.24	$ 2.28	$ 2.34
	Variable Costs, IA Unit Fee, reg compliance portion:	$ 8.58	$ 9.22	$ 8.53	$ 9.11	$ 9.56
	Variable Costs, IA Unit Fee, CWI portion:	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
	Variable Costs, IA Unit Fee, Other County costs portion:	$ 24.07	$ 30.74	$ 24.70	$ 23.67	$ 47.94
	IA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, IA Unit Fee Override	**$ 80.00**	**$ 90.00**	**$ 90.00**	**$ 90.00**	**$ 105.00**
	Variable Costs, GA Unit Fee Calc	$ 9.88	$ 11.02	$ 10.26	$ 10.43	$ 13.86
	Variable Costs, GA Unit Fee, administrative portion:	$ 0.35	$ 0.29	$ 0.29	$ 0.30	$ 0.31
	Variable Costs, GA Unit Fee, reg compliance portion:	$ 1.12	$ 1.21	$ 1.12	$ 1.20	$ 1.27
	Variable Costs, GA Unit Fee, CWI portion:	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
	Variable Costs, GA Unit Fee, Other County costs portion:	$ 3.13	$ 4.02	$ 3.24	$ 3.13	$ 6.36
	GA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, GA Unit Fee Override	**$ 10.00**	**$ 10.00**	**$ 10.00**	**$ 10.00**	**$ 14.00**
	Anticipated Unincorp County Fee Billings	$ 5,396,494	$ 5,905,440	$ 5,870,700	$ 5,836,240	$ 7,003,304
Revenues						
	Anticipated Unincorp County Fee Revenue	$ 4,910,810	$ 5,433,005	$ 5,518,458	$ 5,486,066	$ 6,583,106
	Anticipated Revenue from other Jurisdictions					
	Administrative Fee	$ 177,240	$ 215,346	$ 218,038	$ 220,764	$ 223,523
	Regulatory Compliance	$ -	$ 64,154	$ 61,500	$ 58,847	$ 58,847
	Countywide Infrastructure Maintenance	$ 496,148	$ 560,231	$ 563,680	$ 578,780	$ 584,066
	Current Shared Services IGA for SMP Update	$ 236,409				
	Current Shared Services IGA for WQ Monitoring & PE/PO	$ 36,942				
	Interest	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
	Project Cost Shares	$ 2,771				
	Bond Issuance Proceeds	$ -	$ -	$ -	$ -	$ -
Fund Balance						
	FY Beginning Fund Balance	$ 434,079	$ 186,719	$ (76,559)	$ 192,065	$ 391,176
	Total Costs	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total Revenues	$ 5,862,819	$ 6,275,236	$ 6,364,177	$ 6,346,957	$ 7,452,042
	Surplus (Deficit)	$ (247,360)	$ (263,277)	$ 268,624	$ 199,111	$ (370,436)
	FY End Fund Balance	**$ 186,719**	**$ (76,559)**	**$ 192,065**	**$ 391,176**	**$ 20,740**

Beaufort County
Summary Sheet

Option E.2 - 8/18/2015 CWI changes due to revised GIS dataset

		FY 2015-2016 Revised RS	FY 2016-2017 Revised RS	FY 2017-2018 Revised RS	FY 2018-2019 Revised RS	FY 2019-2020 Revised RS
Rate Base						
1.00%	Accounts	65,314	65,967	66,627	67,293	67,966
-0.50%	Billable IA Units	54,388	54,116	53,845	53,576	53,308
-1.00%	Billable Equivalent GA Units	104,545	103,500	102,465	101,440	100,426
Costs						
	Administration (50250012)	$ 360,495	$ 363,725	$ 368,737	$ 373,179	$ 379,546
	County Portion: Administration	$ 183,255	$ 148,378	$ 150,699	$ 152,416	$ 156,023
	Regulatory Compliance (50250013)	$ 620,242	$ 687,847	$ 635,754	$ 669,218	$ 695,872
	County Portion: Regulatory Compliance	$ 583,300	$ 639,616	$ 589,928	$ 625,797	$ 652,451
	County-Wide Infrastructure O&M (50250011)	$ 3,492,833	$ 3,407,621	$ 3,428,602	$ 3,520,449	$ 3,552,600
	County Portion: County-Wide Infrastructure	$ 2,760,277	$ 2,847,391	$ 2,864,922	$ 2,941,668	$ 2,968,534
	Capital Purchases & Projects	$ 1,636,609	$ 2,079,320	$ 1,662,460	$ 1,585,000	$ 3,194,460
	Total County Costs (excl. debt service)	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total County Costs excl. Shared Services Payable by Others (excl. debt service)	$ 5,163,441	$ 5,714,705	$ 5,268,009	$ 5,304,881	$ 6,971,468
Debt Service						
	Annual Debt Service	$ -	$ 146,185	$ 292,371	$ 438,556	$ 584,741
	Coverage Goal	1.30	1.30	1.30	1.30	1.30
	Actual Coverage		8.78	4.79	2.89	2.04
Revised RS Stormwater Fee						
	Fixed Cost per Account, Calc	$ 11.74	$ 12.44	$ 11.66	$ 12.15	$ 12.53
	Fixed Cost per Account, admin portion:	$ 2.81	$ 2.74	$ 2.80	$ 2.84	$ 2.93
	Fixed Cost per Account, regulatory compliance portion:	$ 8.93	$ 9.70	$ 8.85	$ 9.30	$ 9.60
	Fixed Cost per Account, CWI portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost Collection Rate	91%	92%	94%	94%	94%
	Fixed Cost per Account, Override	$ 12.00	$ 12.00	$ 12.00	$ 12.00	$ 12.00
	Variable Costs, IA Proportion	80%	80%	80%	80%	80%
	Variable Costs, GA Proportion	20%	20%	20%	20%	20%
	Variable Costs, IA Unit Fee Calc	$ 64.68	$ 75.00	$ 71.61	$ 74.15	$ 101.27
	Variable Costs, IA Unit Fee, administrative portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, IA Unit Fee, reg compliance portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, IA Unit Fee, CWI portion:	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
	Variable Costs, IA Unit Fee, Other County costs portion:	$ 24.07	$ 32.90	$ 29.04	$ 30.22	$ 56.71
	IA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, IA Unit Fee Override	$ 65.00	$ 65.00	$ 65.00	$ 65.00	$ 65.00
	Variable Costs, GA Unit Fee Calc	$ 8.42	$ 9.81	$ 9.41	$ 9.79	$ 13.44
	Variable Costs, GA Unit Fee, administrative portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, GA Unit Fee, reg compliance portion:	$ -	$ -	$ -	$ -	$ -
	Variable Costs, GA Unit Fee, CWI portion:	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
	Variable Costs, GA Unit Fee, Other County costs portion:	$ 3.13	$ 4.30	$ 3.82	$ 3.99	$ 7.53
	GA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, GA Unit Fee Override	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00
	Anticipated Unincorp County Fee Billings	$ 5,364,442	$ 5,344,144	$ 5,324,099	$ 5,304,356	$ 5,284,872
Revenues						
	Anticipated Unincorp County Fee Revenue	$ 4,881,642	$ 4,916,612	$ 5,004,653	$ 4,986,095	$ 4,967,780
	Anticipated Revenue from other Jurisdictions					
	Administrative Fee	$ 177,240	$ 215,346	$ 218,038	$ 220,764	$ 223,523
	Regulatory Compliance	$ -	$ 48,230	$ 45,825	$ 43,421	$ 43,421
	Countywide Infrastructure Maintenance	$ 496,148	$ 560,231	$ 563,680	$ 578,780	$ 584,066
	Current Shared Services IGA for SMP Update	$ 236,409				
	Current Shared Services IGA for WQ Monitoring & PE/PO	$ 36,942				
	Interest	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
	Project Cost Shares	$ 2,771				
	Bond Issuance Proceeds	$ -	$ 5,000,000	$ -	$ 5,000,000	$ -
Fund Balance						
	FY Beginning Fund Balance	$ 434,079	$ 157,551	$ 4,215,773	$ 3,662,546	$ 7,907,703
	Total Costs	$ 6,110,180	$ 6,684,698	$ 6,387,923	$ 6,586,402	$ 8,407,219
	Total Revenues	$ 5,833,651	$ 10,742,920	$ 5,834,697	$ 10,831,559	$ 5,821,290
	Surplus (Deficit)	$ (276,528)	$ 4,058,222	$ (553,227)	$ 4,245,157	$ (2,585,930)
	FY End Fund Balance	**$ 157,551**	**$ 4,215,773**	**$ 3,662,546**	**$ 7,907,703**	**$ 5,321,774**

Beaufort County
Summary Sheet

Option F.2 - 8/18/2015 CWI changes due to revised GIS dataset

		FY 2015-2016 Revised RS	FY 2016-2017 Revised RS	FY 2017-2018 Revised RS	FY 2018-2019 Revised RS	FY 2019-2020 Revised RS
Rate Base						
1.00%	Accounts	65,314	65,967	66,627	67,293	67,966
-0.50%	Billable IA Units	54,388	54,116	53,845	53,576	53,308
-1.00%	Billable Equivalent GA Units	104,545	103,500	102,465	101,440	100,426
Costs						
	Administration (50250012)	$ 360,495	$ 363,725	$ 368,737	$ 373,179	$ 379,546
	County Portion: Administration	$ 183,255	$ 148,378	$ 150,699	$ 152,416	$ 156,023
	Regulatory Compliance (50250013)	$ 620,242	$ 687,847	$ 635,754	$ 669,218	$ 695,872
	County Portion: Regulatory Compliance	$ 583,300	$ 623,693	$ 574,254	$ 610,371	$ 637,025
	County-Wide Infrastructure O&M (50250011)	$ 3,492,833	$ 3,407,621	$ 3,428,602	$ 3,520,449	$ 3,552,600
	County Portion: County-Wide Infrastructure	$ 2,760,277	$ 2,847,391	$ 2,864,922	$ 2,941,668	$ 2,968,534
	Capital Purchases & Projects	$ 1,636,609	$ 2,079,320	$ 1,662,460	$ 1,585,000	$ 3,194,460
	Total County Costs (excl. debt service)	$ 6,110,180	$ 6,538,513	$ 6,095,553	$ 6,147,846	$ 7,822,478
	Total County Costs excl. Shared Services Payable by Others (excl. debt service)	$ 5,163,441	$ 5,698,782	$ 5,252,334	$ 5,289,455	$ 6,956,042
Debt Service						
	Annual Debt Service	$ -	$ 146,185	$ 292,371	$ 438,556	$ 584,741
	Coverage Goal	1.30	1.30	1.30	1.30	1.30
	Actual Coverage		9.02	4.87	2.92	2.36
Revised RS Stormwater Fee						
	Fixed Cost per Account, Calc	$ -	$ -	$ -	$ -	$ -
	Fixed Cost per Account, admin portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost per Account, regulatory compliance portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost per Account, CWI portion:	$ -	$ -	$ -	$ -	$ -
	Fixed Cost Collection Rate	91%	92%	94%	94%	94%
	Fixed Cost per Account, Override	$ -	$ -	$ -	$ -	$ -
	Variable Costs, IA Proportion	80%	80%	80%	80%	80%
	Variable Costs, GA Proportion	20%	20%	20%	20%	20%
	Variable Costs, IA Unit Fee Calc	$ 75.95	$ 86.41	$ 82.39	$ 85.54	$ 113.17
	Variable Costs, IA Unit Fee, administrative portion:	$ 2.70	$ 2.19	$ 2.24	$ 2.28	$ 2.34
	Variable Costs, IA Unit Fee, reg compliance portion:	$ 8.58	$ 9.22	$ 8.53	$ 9.11	$ 9.56
	Variable Costs, IA Unit Fee, CWI portion:	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
	Variable Costs, IA Unit Fee, Other County costs portion:	$ 24.07	$ 32.90	$ 29.04	$ 30.22	$ 56.71
	IA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, IA Unit Fee Override	$ 80.00	$ 80.00	$ 80.00	$ 80.00	$ 80.00
	Variable Costs, GA Unit Fee Calc	$ 9.88	$ 11.30	$ 10.83	$ 11.30	$ 15.02
	Variable Costs, GA Unit Fee, administrative portion:	$ 0.35	$ 0.29	$ 0.29	$ 0.30	$ 0.31
	Variable Costs, GA Unit Fee, reg compliance portion:	$ 1.12	$ 1.21	$ 1.12	$ 1.20	$ 1.27
	Variable Costs, GA Unit Fee, CWI portion:	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
	Variable Costs, GA Unit Fee, Other County costs portion:	$ 3.13	$ 4.30	$ 3.82	$ 3.99	$ 7.53
	GA Collection Rate	91%	92%	94%	94%	94%
	Variable Costs, GA Unit Fee Override	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 12.00
	Anticipated Unincorp County Fee Billings	$ 5,396,494	$ 5,364,280	$ 5,332,250	$ 5,300,480	$ 5,469,752
Revenues						
	Anticipated Unincorp County Fee Revenue	$ 4,910,810	$ 4,935,138	$ 5,012,315	$ 4,982,451	$ 5,141,567
	Anticipated Revenue from other Jurisdictions					
	Administrative Fee	$ 177,240	$ 215,346	$ 218,038	$ 220,764	$ 223,523
	Regulatory Compliance	$ -	$ 64,154	$ 61,500	$ 58,847	$ 58,847
	Countywide Infrastructure Maintenance	$ 496,148	$ 560,231	$ 563,680	$ 578,780	$ 584,066
	Current Shared Services IGA for SMP Update	$ 236,409				
	Current Shared Services IGA for WQ Monitoring & PE/PO	$ 36,942				
	Interest	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
	Project Cost Shares	$ 2,771				
	Bond Issuance Proceeds	$ -	$ 5,000,000	$ -	$ 5,000,000	$ -
Fund Balance						
	FY Beginning Fund Balance	$ 434,079	$ 186,719	$ 4,279,389	$ 3,749,499	$ 8,006,439
	Total Costs	$ 6,110,180	$ 6,684,698	$ 6,387,923	$ 6,586,402	$ 8,407,219
	Total Revenues	$ 5,862,819	$ 10,777,368	$ 5,858,034	$ 10,843,342	$ 6,010,503
	Surplus (Deficit)	$ (247,360)	$ 4,092,670	$ (529,890)	$ 4,256,940	$ (2,396,716)
	FY End Fund Balance	**$ 186,719**	**$ 4,279,389**	**$ 3,749,499**	**$ 8,006,439**	**$ 5,609,723**

Beaufort County Stormwater Rate Study
Final Report – City of Beaufort
April 2016

Prepared by Applied Technology & Management

Assistance from Raftelis Financial Consultants

and Beaufort County Stormwater Utility

Contents

Executive Summary

Beaufort County, in cooperation with the City of Beaufort, and the Towns of Bluffton, Hilton Head Island, and Port Royal retained Applied Technology and Management (ATM) and its sub-consultant, Raftelis Financial Consultants to perform a rate study for the five stormwater utilities operated by the respective jurisdictions. The rate study was performed for each jurisdiction, and this report represents the results for the City of Beaufort (herein, City) within the context of the broader study.

The County is facing a declining rate base driven by annexations, steeply mounting costs for maintaining county-wide drainage infrastructure and complying with new MS4 requirements, and in need of continued capital project construction. The municipalities also face challenges which vary by jurisdiction, and these higher and more variable costs among the five jurisdictions were the driving force behind this rate study. The City of Beaufort has been sufficiently supporting its stormwater program with the historical level of revenue, but the program is likely to shift in the near future to address large capital needs.

The rate analyses performed in support of this rate study included six options for each jurisdiction, which can be modeled in the final rate model by choosing from a slate of scenarios. The options vary the rate metrics (impervious area, fixed charges per ratepayer, gross area), vary the way that shared costs are allocated between jurisdictions (by impervious area or by account), accommodate the existing administrative charges paid by each jurisdiction to the County (currently at $3.18 per SFU), accommodate the existing payments made by municipalities to the County for varying levels of water quality monitoring and public outreach, and accommodate a new charge by the County to each municipality for that municipality's proportionate share of the entire County's drainage infrastructure to be maintained by the County. The detailed description of the six options is as follows:

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

In these evaluations, simplified residential rates means a series of flat rate charges for impervious area similar to how the rate structure works now.

The recommended rate structure option from these evaluations is, for the City of Beaufort, Option E. Under this option, the City can use debt financing for large capital projects, would share administrative

costs allocated on a per-account basis, and fund City operations and maintenance costs through variable charges.

As a part of the County's revised rate structure, customers in the City are assessed by the County a new County-wide Stormwater Infrastructure (CWI) fee. This new fee will assist the County with funding stormwater infrastructure maintenance and repairs within all areas of the County including within municipal boundaries. This new fee was developed using a proportionate share of county-wide infrastructure costs (based on the amount of county-owned and maintained infrastructure within that jurisdiction) allocated across impervious and gross area within the jurisdiction. This percentage for the City is 2.2%. In FY 2015-2016, under the previous rate structure, this equated to an additional charge of $5.15 per SFU. For FY 2016-2017 and under the proposed rate structure, this will be $4.58 per impervious area unit and $1.49 per gross area unit. For a typical single family residential property on a one acre lot, the CWI will represent an additional $6.07 charge. This structure is described further within.

The County was the only jurisdiction to make rate structure changes in FY 2015-2016. As of the date of this report, some municipalities including the City, expect to make these changes for FY 2016-2017.

For the City, the existing rates are $105 per SFU per year. Continuing with the current rate structure these rates will support the current annual program of services through FY2019-2020 unless capital spending increases appreciably from the approximate $250,000 per year that is modeled.

Under the recommended Option E, the rate structure will change to one with a fixed charge per account, plus a variable charge for impervious area and another variable charge for gross lot area. For a "tier 2" (average house) residence in the City on a one acre lot, the charge under Option E would remain $105 per year and would also support the budgeted program out to FY2019-2020 without a rate increase, although the total charges would be slightly higher due to the CWI fee. Although the $105 City charge is identical to the City's current annual charge for the Tier 2 residential properties, it is not exactly the same for all ratepayers since the rate is based on different factors.

Background

The southern coast of South Carolina has long been a desirable tourist destination and sought after place to live, in no small part due to the natural beauty surrounding the areas waterways. In recent years, Beaufort County has declared its intention to be a regional leader in environmental quality initiatives in order to promote this existing advantage. An important subset of environmental quality, especially in this region, is the effective management of stormwater runoff. Because the County is right on the coast, and is crossed by large water bodies otherwise, the imperative to manage stormwater runoff has immediate implications on water quality in the region, rather than somewhere downstream. Beaufort County and its underlying jurisdictions – the City of Beaufort, the Town of Port Royal, Town of Hilton Head Island, and Town of Bluffton – take this charge seriously, and have over time developed individual and cooperative programs to manage the public safety and water quality concerns related to stormwater runoff.

As these programs have matured over time, they have become more costly, and several jurisdictions now find themselves needing to evaluate their operating costs and investments in any needed capital improvement projects. The jurisdictions are interested in revising rates and exploring other financial tools to support program initiatives, especially capital spending, and have engaged Applied Technology & Management (ATM) and subcontractor Raftelis Financial Consultants (RFC) to conduct a rate structure analysis and rate studies similar to this study that was prepared for the County. This report summarizes the results of ATM's efforts on behalf of the City of Beaufort within the context of the County-wide rate study.

Jurisdictional Cooperation

Although historically each jurisdiction has managed stormwater concerns indirectly through individual development standards and environmental ordinances, the group has been working together for many years to manage storm drainage and ensure an improved standard of living for residents of the County. This relationship has become more explicit over time, through the development of inter-governmental agreements and memoranda of understanding, and through a closer working relationship among staff of each local government.

The most outstanding example of cooperation relates to the administration of the five separate utilities. Since 2001, when the utilities went into effect, the County has provided administrative services, including billing, billing data maintenance, and customer service, in exchange for a small portion of the fee revenues for each underlying jurisdiction.

The County has historically been a significant service provider for drainage maintenance activities to each of the underlying jurisdictions, offering a menu of drainage infrastructure cleaning, maintenance, and repair activities at hourly rates. The patchwork nature of the jurisdictional boundaries lends itself to a cooperative approach to these activities whenever possible to maximize efficiencies in equipment and staff time.

Three of the five jurisdictions participating in the regional stormwater utility, not including the City, have recently been permitted as a municipal separate storm sewer systems (MS4) and become regulated under National Pollutant Discharge Elimination System (NPDES) MS4 permits. These permits require strict management of activities that impact the quality of stormwater runoff, such as construction and

industrial activities, as well as significant goals of public education and outreach in order to bolster the general public's ability to and interest in managing stormwater runoff responsibly.

Under the new permits, the jurisdictions will be required to perform maintenance activities on existing stormwater drainage infrastructure (as is done now), monitor water quality at outfalls, inspect facilities and infrastructure, and provide education and outreach to citizens. The costs for these activities can be limited if they are performed in coordination between jurisdictions, either across the entire county or in more geographically distinct regions (such as North of the Broad River).

Utility background

Each of the five jurisdictions has a separate stormwater utility, established by separate ordinance, allowing the jurisdiction to collect revenues dedicated to stormwater management activities. As mentioned above, each jurisdiction cooperates in the administration of the utility by funding a portion of the County staff and material costs, effectively creating a regional utility.

At the inception of the regional utility in 2001, each property was charged a stormwater fee (conveyed on the annual tax bill) based on the size of the property and a runoff factor associated with that type of property. At this time, all five jurisdictions were charging the same rate, such that a similar property in any jurisdiction would pay the same annual fee. By 2005, the County had access to aerial photography that allowed for a more reliable approach to fee calculation. Rather than use tabular property characteristics to develop the fee for an individual property, the fee could be calculated based on one characteristic that was deemed an important cost driver: impervious surface area. Some elements of the previous rate structure remained intact, but for developed properties, the utility replaced their existing rate structure with one based on impervious surface area as measured from aerial photography.

At its core, this is an industry standard approach to calculating stormwater fees. However, the data available to the County in 2005 were already several years out of date and of relatively poor quality (see Figure 1 below). In recent years, the County has been able to obtain much higher quality imagery on an annual basis and has been updating its impervious area measurements, the foundational billing data, as properties change.

Figure 1. Comparison of 2002 and 2015 Aerial Photography

Current Stormwater Utility Structure

Rate Structure

As defined by the ordinances passed in 2005, the jurisdictions share a rate structure, though each is allowed to charge rates necessary to generate the revenue needed within each individual jurisdiction. The current rate structure has three distinct parts: residential properties, nonresidential properties, and vacant lands. Because the stormwater fee is conveyed on the tax bill and the data should be related, every property falls into one of these three categories depending on its classification in the tax system. Generally, the basis for the rate is the amount of runoff a property generates, whether that be the result of impervious area or some other driver.

At the time of the last rate base and rate structure analysis, the median impervious surface area on single family residential properties was 4,906 square feet. This became the base unit (single family unit or SFU) for measuring impervious area on other types of properties as well. For property types within the tax system that have **residential** classifications, each equates to a distinct SFU equivalency factor in three "tiers." Residential property with 2,521 square feet or less of impervious area is tier 1. Tier 3 is residential property with 7,266 square feet or more of impervious area, and all residential property between these two impervious measures is tier 2. The tier equivalent SFU factor is multiplied by the per SFU rate for encompassing jurisdiction results in the rate. This concept is called simplified residential rates and is recommended in the newly modeled rate structures described in this study. The residential property types and SFU equivalencies are as follows:

Property Type	Equivalent SFUs
Tier 1 Single Family Unit (≤2,521 square feet)	0.50
Tier 2 Single Family Unit (2,522 to 7,265 square feet)	1.00
Tier 3 Single Family Unit (≥7,266 square feet)	1.50
Mobile Home	0.36
Apartment	0.39
Townhouse	0.60
Condominium	0.27

Where a single property includes multiple residential units, the equivalent SFU is per unit, such that an apartment complex property with 100 units would be charged for 0.39 (SFUs per unit) times 100 (number of units) times the rate to calculate the final fee.

Nonresidential properties represent the simplest of area of the current rate structure. For every property not classified as residential or vacant in the tax system, the stormwater fee is calculated based on the amount of impervious surface area on that property. This amount, divided by the 4,906 square foot SFU and multiplied by the per SFU rate, results in the final fee. There is no rounding or other manipulation of data.

Finally, **vacant** lands are presumed to have no impervious area, and are therefore not charged on that basis. They do still have an impact on the stormwater system, however, and should be responsible for a portion of the costs. At present, the rate structure allows for 'runoff factors' to be applied to vacant lands, with different factors used depending on a matrix of classification including whether a property is classified as agriculture, forestry, disturbed, or undisturbed.

Business Processes

In addition to the documented rate structure, there exist a number of business processes that have been developed over time to facilitate utility administration. Most of these processes are in line with the current ordinance but some have evolved to address data collection and maintenance difficulties that emerged from the existing rate structure. These include:

- the treatment of golf courses and parks as vacant land when in fact they may have a good deal of impervious area
- treatment of multi-use parcels (such as house and forested area on the same lot) as separate parcels with summed fees
- granting stormwater best management practices credit by overriding a property's fee to 1 SFU

During the course of these studies, the ATM team worked to identify any divergent business processes and compute updated metrics for the affected properties.

Rates

With the same rate structure in place since 2005, each jurisdiction has experienced increased revenue requirements and subsequently higher rates over time. Table 1 is a summary of each jurisdiction's rate history per SFU over time.

Table 1. Stormwater Fee Rates over Time

	2005-2006	*2007*	*2008*	*2009*	*2010*	*2011*	*2012-2014*
Beaufort County	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
City of Beaufort	$ 44.43	$ 44.43	$ 44.43	$ 44.43	$ 65.00	$ 65.00	$ 105.00
Town of Port Royal	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
Town of Bluffton	$ 49.00	$ 49.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00
Town of Hilton Head Island	$ 44.43	$ 50.76	$ 50.76	$ 83.23	$ 108.70	$ 108.70	$ 108.70

City of Beaufort Stormwater Program

The City of Beaufort is the densest region of Beaufort County. It is home to many personnel stationed at the Marine Corps Air Station and the Marine Corps Recruit Depot Parris Island (the latter located within the Town of Port Royal). The City has historically had a carefully run stormwater program but had limited funds for capital projects, and has maintained a moderate fund balance from year to year. The City has been putting funds towards street drainage improvements and streetscape projects as a holistic approach to improving drainage and the aesthetic value of the urban environment. In support of these initiatives, personnel and operational costs continue to grow at a steady pace, along with engineering and professional services.

The County has been financially responsible for maintenance and repair on county-wide infrastructure on and off County road rights of way, even within the municipal boundaries of the City. More recently, the County has become unable to adequately provide stormwater services throughout the entirely of the unincorporated county with the available funds. That is, maintenance activities in parts of the county, especially those pockets within other jurisdictions, have been neglected in favor of addressing needs that could be met more economically. The City and Towns have not been receiving the stormwater management services they have come to expect from the County, those the County also endeavors to provide, because of funding shortfalls. This shortfall is to be addressed through the County-wide Infrastructure fee, described below, and the County expects to better be able to provide those services going forward.

While the operations portion of the City's program is not expected to expand greatly, the City is facing growing capital needs as it endeavors to repair and replace infrastructure that is, in some places, a century old. The City has been working on mapping the system, and logging and prioritizing capital needs. The projects identified in this effort, if rate funded, will eventually drive the annual rates up significantly.

Rate Study Approach

Due to the City's growing stormwater program and the vast capital need, the City has increasing costs over the coming years. The County, also faced with steeply increasing costs, initiated a rate study to achieve the most equitable cost recovery structure within the unincorporated County and the four municipalities. The rate study, detailed in this section, resulted in an optimal rate structure for all

participating jurisdictions. For the sake of administrative simplicity and continuity, a single rate structure was recommended for all jurisdictions.

The ATM team was contracted to assist Beaufort County Stormwater (County) with a detailed stormwater utility rate study. For the unincorporated County and each of the four municipalities, the team conducted a full accounting of planned stormwater program costs over the next five years, which are expected to increase driven by the combination of existing operations and maintenance activities, a significant capital project backlog, and emerging NPDES compliance needs. The rate study was performed concurrent with the budgeting process for the fiscal year that began July 1, 2015, and resulted in the development and consideration of a number of rate structure options, described below.

Goals

The primary goal of the rate study was to model financially sufficient scenarios to support the jurisdictions' current and future stormwater programs. This included the following supporting objectives:

1. Determine the current and future (from MS4 compliance, jurisdictional growth, etc.) revenue requirements of each program;
2. Determine the most fair and reasonable way to recover revenues while balancing data maintenance efforts;
3. Facilitate future program visioning; and
4. Account for potential future collaboration and shared costs.

Through numerous meetings, extensive model development and refinement, and collaborative review of the results, the team and the project remained accountable to these goals throughout the process.

Modeling

The primary deliverable from the rate study is a model that was developed to compare and contrast different financial scenarios for each of the jurisdictions. The model balances revenue requirements with funding from the stormwater fee and other possible sources. On the revenue requirements side, for each jurisdiction the ATM team considered existing revenue requirements, future MS4 permit related expenses, and capital needs. Revenue was modeled as the resulting revenue from several different rate structures as well as supplemental resources from bond issuances or other sources. With that basic structure in place, the model was refined to allow for allocation of costs across jurisdictions and rate components (see below for more information) in order to optimize rate equity.

The finalized model has been made available to each jurisdiction for ongoing use as a financial planning tool.

Data update

Much of the impervious area data originally developed for the 2005 rate study was created using low-quality 2002 aerial imagery. With the possible shift in rates and rate structure, it was critical to have improved source data. As a part of the rate study, the ATM team conducted a targeted review update (where needed) of approximately 5,000 parcel polygons within the GIS and across all of the jurisdictions in order to update the rate base.

At the conclusion of the effort, RFC reviewed and updated the impervious features as necessary on a total of 5,937 parcel polygons, deriving the features using the newest available imagery from 2013.

Rate Components

Fixed Costs

Many costs associated with the administration of the utility have little to do with specific characteristics of the land. Rather, they represent a public service to which each property owner (account holder) has equal access. Billing and collections, data management and updating, programming, and customer support fall within this category. These costs, then, are distributed evenly to each account holder by being allocable to a fixed charge per parcel.

Variable Costs: Impervious Surfaces Area and Gross Parcel Area

Impervious area is the area of land covered by a hard surface through which rainwater cannot pass, such as building footprints and parking lots. The amount of impervious area on a parcel is most directly related to the quantity of stormwater to be handled by the system. For bare soil and vegetated ground cover, some water will infiltrate into the ground—even during heavy rain—rather than run across the surface. For impervious surfaces, on the other hand, water cannot infiltrate into the ground. For that reason, impervious surface causes the peak discharge volume of runoff from a parcel of land to be higher than it would otherwise. Regardless of how the land is managed, runoff tends to gather nutrients and other potential pollutants. Because virtually none of this runoff (and the pollutants it carries) soaks into the ground, runoff from impervious area carries a greater volume of harmful materials toward receiving waterbodies than pervious area.

One unique aspect of the stormwater utilities in these jurisdictions is the wide variety of land use represented within each jurisdiction. Gross area is included as a component of the stormwater fee to capture the costs not solely related to impervious area runoff. As opposed to impervious area, gross land area contributes proportionately more to the nutrients and pollutants that stormwater runoff may pick up and less to the sheer volume of runoff to be managed. As discussed, pervious land can absorb some of the water that falls on it, so it does not contribute as much to runoff. However, pervious land still contributes pesticides, fertilizers, leaves, and other undesirable materials to the runoff that does occur. As such, stormwater costs related to water quality and quantity (most O&M costs) are allocable in some portion to gross land area.

In the costs described below, allocability to impervious area and gross area represents a relationship between a particular cost and the demand for that cost caused by a higher volume of stormwater (including higher levels of pollution) to be managed. An impervious and gross area rate structure allocates some cost to each of the two variables, in this case either allocating 80% or 90% of the variable costs to impervious area, and the remaining costs to gross area. The gross area units would include a declining block, such that large properties have more units of gross area than small properties, but the increase in units of gross area as overall parcel size increase are blunted by the declining block.

Cost Allocability

The proposed rate structures take into account a number of costs that vary by:

- Who provides the service,
- Who receives the service, and

- What drives the cost of the service (the existence of an account, impervious area or gross area)

This section describes the different elements of the jurisdictions' and utility's program costs and how they may be accommodated in the rate structures. The resulting modeled rates for each jurisdiction take into account the distribution of costs across all jurisdictions based on the chosen allocation scheme, and the particular rate base of that jurisdiction.

Jurisdictional Infrastructure O&M

Each of the five jurisdictions maintains its own stormwater drainage infrastructure and funds those costs from utility revenue. These costs are driven by impervious area and gross area in the jurisdiction, which contribute to stormwater runoff and nutrient loading. As such, the impervious and/or gross area component of the fee will include these costs. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Jurisdiction Capital Projects

Each of the five jurisdictions has an independent capital plan, and can determine whether bond funding or pay as you go funding (or paying with available unencumbered funds) is appropriate or necessary. Capital financing has been "pay-as-you-go" for most jurisdictions. An alternative is for jurisdictions to borrow money to build capital projects and pay this back over time. This option is described in the definitions as debt.

The cost drivers for capital projects are similar to those for regular O&M, and are allocable to impervious and gross area within a jurisdiction. Debt service (in the case of bond funding) or cash contributions to capital projects are included in the impervious and/or gross area components of a fee. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Debt

For some of the jurisdictions, including for the City, capital needs outpace the funds available through fee revenue. Issuing debt in the form of revenue bonds is a viable alternative to fund these projects, and in some cases may be the most appropriate option. Debt financing is appropriate for large physical assets with long expected lives, generally constructed improvements. Most notable, debt service creates a mechanism for future ratepayers to help fund the infrastructure from which they still benefit. The exceptional environmental quality found in this region is one of the primary reasons people choose to live and work here, and at its most basic, every investment made in capital projects supports that fundamental tenet. Through debt funding of capital projects, ratepayers of the future can pay back into the program that promotes this high quality of life.

Issuance of revenue bonds will not affect a jurisdiction's existing covenants or caps. With revenue bonds, the jurisdiction's stormwater utility will be solely responsible for servicing that debt through utility revenues, and there is no risk to the greater entity.

County-wide Infrastructure O&M

The County maintains some larger drainage infrastructure within each of the four municipalities in addition to drainage infrastructure within the unincorporated area. County-wide infrastructure (defined as pipes and open ditches both in and out of rights of way that are owned or maintained by the County) maintenance costs have not been allocated to any ratepayers outside the unincorporated County prior to FY 15-16. That is, revenue from fees charged to property owners in the unincorporated County have

been funding infrastructure maintenance, repair, and replacement activities throughout all five jurisdictions. Currently, these activities have been limited in the incorporated areas because funding levels, supported by the unincorporated ratepayers only, are insufficient. The modified rate structure will share the County's costs for County-wide infrastructure maintenance across all the unincorporated and incorporated areas of the County based on linear feet of pipes and open ditches in each jurisdiction.

The cost drivers for operation and maintenance of county infrastructure are very similar to those for the various jurisdictional stormwater infrastructure systems. These costs may be recovered through an impervious and/or gross area fee component, the revenue from which supports County efforts. Revenue from this fee component would be returned to the service provider, the County.

The County's total budgeted County-wide infrastructure operation and maintenance cost is approximately $3.5 million in FY 2015-2016. A detailed analysis of the proportions of this County-wide infrastructure was prepared in 2015 by the County, and was used as the basis for the cost allocations to unincorporated areas of the County and to the municipalities. This inventory was conducted in GIS data layers and was made available to all jurisdictions by the County as part of this study. The analysis shows the proportions to be:

Unincorporated County	83.6%
City of Beaufort	2.2%
Town of Port Royal	0.8%
Town of Bluffton	7.6%
Town of Hilton Head Island	5.8%

Based on this proportional breakdown, the County began to convey a separate charge (as a new line on the bill, not to be added to or combined with the City/Towns fees), that bills this amount per SFU or IA/GA unit, as the rate structure would require. Final fee amounts are discussed in the Modified Rate Structure section, below.

Utility Administration

The County administers the cooperative utility for each of the five jurisdictions. Currently administrative fees are allocated across the impervious area rate base such that properties with a large number of SFUs of impervious area pay more in administrative fees than those with fewer SFUs.

Costs for this effort may be allocable to either the number of parcels or accounts for which data must be maintained, customer service must be provided, etc. These costs may instead be recovered via a fixed charge component charged to all utility customers. Alternatively, costs could be allocable to the impervious and/or gross area fee component if they are more closely related to the effort of maintaining the geospatial data or researching and addressing detailed questions from large, complex customers. Revenue from this fee component would be returned to the service provider, the County.

MS4 Compliance

The City is not yet subject to MS4 permit requirements. Still, they participate with the County in programs that comprise MS4 elements, such as water quality monitoring and education. For those jurisdictions subject to permit requirements, some program elements are fulfilled by each individual

jurisdiction while others are provided cooperatively. Any existing inter-governmental agreements and Memoranda of Understanding (MOU) may need to be revised if an alternate structure is chosen.

Cooperative Efforts

Monitoring

The County currently provides monitoring efforts within the boundaries of the municipalities. This relationship could be expanded to other jurisdictions if desired. These costs would be driven by the number of accounts and would be included in the fixed charge component of the fee, only in the jurisdictions where the County provides this monitoring service. Revenue from this fee component would be returned to the service provider, the County.

Public Education/Outreach

Currently, the jurisdictions participate in a cooperative public education and outreach scheme. Rather than implement separate agreements between each jurisdiction, this cost can be considered a per account cost and included in the fixed charge component of the fee, applicable to everyone in the County. Revenue from this fee component would be returned to the service provider, the County.

Individual Efforts

Other MS4 permit compliance activities may be done separately by each jurisdiction, and provided only to that jurisdiction. These costs are allocable to the impervious and/or gross area fee component and revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Modeled Options

Elements of Six Rate Structure Options

Simplified residential rate: Charge one of a series of flat rates, based on SFUs, to different classes of residential properties. This is how residential rates work in the current rate structure.

Continued application of the agricultural use policy: Properties legally under certain agricultural uses have limits placed on their stormwater fees by state law. The rate structure options will continue to follow this approach.

Updated source data: RFC reviewed and updated as necessary 5,937 parcel polygons throughout the five jurisdictions with the newest available imagery from 2013. The results of this update were used to model both the modified rate structure options and the current rate structure options, which make use of the newly measured impervious features.

Minimum charge: A minimum charge is a rate structure feature whereby once the amount a property owes in annual stormwater fees is computed it is compared to the minimum charge and if less, the minimum charge is applied to the property. The minimum charge is set to reflect the minimum amount of demand a property can actually place on the jurisdiction providing service. The minimum charge is represented as a fixed fee component and is charged to every property.

Options

A. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; pay-as-you-go capital financing

B. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; debt financing for some capital projects

C. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per-account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

D. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

E. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

F. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

Table 2. Modeled Rate Structure Options

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

Modified Rate Structure

ATM modeled four of the six options based on a modified rate structure design that relies more heavily on measured impervious area data but retains the basic backbone of the existing rate structure.

Fee Structure

The recommended fee includes three components: a fixed component to convey costs allocable by account, and two variable components: one based on gross area and one based on impervious area, to convey the costs that vary by property characteristic. With the exception of those explicitly exempt, every real property (which in some cases does not include land on the ground) has a stormwater fee calculated for it.

Bill Class

Every property falls into one of several bill classes, which determine fee calculation for that property. Residential properties are treated in a similar manner as they are currently, with SFU equivalents to represent the impervious area on each type of residential property. Gross area and fixed fee components are added to this portion of the residential fee. Vacant property is not charged for any impervious area, measured or assumed. It is, however, charged for the gross land area of the parcel and the fixed component of the fee, as described below. Exempt parcels are not charged any portion of the fee. Finally, all other properties are considered non-residential, non-vacant properties (herein called "commercial"), which are charged a per unit rate for impervious area, along with a fixed fee and gross area charge.

Rate Structure Design

Impervious Area Units

The existing impervious area unit of 4,906 has been retained for maximum equity between residential and commercial bill classes in impervious area charge. Residential properties are charged for impervious area based on the factors existing in the current rates structure. Commercial properties are charged per 4,906 square feet unit, or part thereof, of impervious area. Under the modified rate structure design, 80% of variable costs are funded through impervious area charges.

Gross Area Blocks

A gross area fee component is included for all properties that have a real parcel and parcel area found in GIS. The gross area charge is calculated in equivalent units as follows:

- Every property is charged $X for the first 2 acres of gross area. This means that every property getting a gross area fee is charged at least $X.
- For every acre above 2 acres, and up to 10 acres, the property is charged .5*$X per acre.
- For every acre above 10 acres, and up to 100 acres, the property is charged .4*$X per acre.
- For every acre above 100 acres, the property is charged .3*$X per acre.

This declining block structure maintains the important rate base of large properties. Under the modified rate structure design, 20% of variable costs are funded through gross area charges.

Exempt Properties and Special Cases

The modified rate structure design mirrors the current rate structure in exempt properties. Roads, railroads, private roads, and boat slip properties are exempt from stormwater fees. As described above, vacant (undeveloped) parcels are not exempt from the entire fee, but are not charged for the impervious area fee component.

Credit

For properties receiving credit for BMPs, that credit can be carried forward in this modified rate structure, by utilizing a new set of credits policies and a manual developed by the County and made available to the City.

Rate Study Results

ATM developed a spreadsheet-based rate model tool to model the way the individual jurisdiction and County-wide costs impact rates. The comprehensive model can be manipulated to calculate rates for each of the six options described above, as well as allow for manual override of the calculated rates to predict the revenue generation and sufficiency of a particular rate structure and rate choice.

ATM and Utility staff recommend rate structure Option E for the unincorporated County and therefore also recommend Options E or C for each underlying jurisdiction. Both Options C and E result in rates for a fixed charge, an impervious area charge, and a gross area charge. Option E includes the flexibility to issue debt and fund payments through the variable components of the charge. For the City, ATM recommends Option E, which allows for but does not require debt issuances; potentially empowering the City to more smoothly and equitably fund large capital projects. The recommended rates are as follows:

	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
Fixed Cost per Account	**$5.00**	**$5.00**	**$5.00**	**$5.00**
Cost per IA Unit	**$75.00**	**$75.00**	**$75.00**	**$75.00**
Cost per GA Unit	**$25.00**	**$25.00**	**$25.00**	**$25.00**

Under Option C, administrative and regulatory compliance charges are allocated on a per account basis, infrastructure O&M costs are allocated based on the impervious and gross area, and no debt is issued within the planning period.

The City is responsible for funding 2.2% of all county-wide infrastructure (CWI) operation and maintenance, with the allocation based on the amount of infrastructure to be maintained by the County that falls within each jurisdictional boundary, as described previously. Under the proposed rate structure, this is a $6.07 annual charge for an average house on a lot smaller than 2 acres. For the upcoming fiscal years, the CWI funding within each jurisdiction's boundaries on an SFU or IA/GA basis (depending on the rate structures chosen) are:

Table 3. County-wide Infrastructure Cost Breakdown by Jurisdiction

8/18/2015 CWI changes due to revised GIS dataset

	FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
CWI Cost Share on SFU Basis					
Unincorporated County	$ 45.30	$ 46.97	$ 47.50	$ 49.01	$ 49.71
City of Beaufort	$ 5.15	$ 5.74	$ 5.70	$ 5.78	$ 5.76
Town of Port Royal	$ 3.88	$ 4.33	$ 4.30	$ 4.36	$ 4.35
Town of Bluffton	$ 18.13	$ 20.22	$ 20.09	$ 20.38	$ 20.31
Town of Hilton Head Island	$ 5.52	$ 6.15	$ 6.11	$ 6.20	$ 6.18
CWI Cost Share on IA/GA Unit Basis					
Unincorporated County					
per IA Unit	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
per GA Unit	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
City of Beaufort					
per IA Unit	$ 4.10	$ 4.58	$ 4.55	$ 4.61	$ 4.60
per GA Unit	$ 1.34	$ 1.49	$ 1.48	$ 1.51	$ 1.50
Town of Port Royal					
per IA Unit	$ 3.13	$ 3.49	$ 3.47	$ 3.52	$ 3.51
per GA Unit	$ 0.78	$ 0.87	$ 0.87	$ 0.88	$ 0.88
Town of Bluffton					
per IA Unit	$ 17.83	$ 19.89	$ 19.76	$ 20.04	$ 19.97
per GA Unit	$ 2.25	$ 2.51	$ 2.49	$ 2.52	$ 2.52
Town of Hilton Head Island					
per IA Unit	$ 4.39	$ 4.89	$ 4.86	$ 4.93	$ 4.91
per GA Unit	$ 1.43	$ 1.60	$ 1.59	$ 1.61	$ 1.60

In the first planning year, FY 2015-2016, several shared costs (those for the regional stormwater master plan, public education and outreach, and water quality monitoring) are funded via inter-governmental

agreements with the responsible parties. In this year only, these are represented as separate revenues and the costs are not allocated to the jurisdictions based on SFU or IA/GA unit calculation.

General Impacts of Rate Structure Changes

The recommended rate structure incorporates a fixed charge per account (parcel), plus two variable charges: one for impervious area on the parcel and one for gross parcel area. It also continues the practice of using simplified residential rates for residential properties of varying types from single family detached through condominium units. Because the current billing practices for large undeveloped tracts include an impervious area estimation process while the new rates structures do not charge an impervious area fee if there is no impervious area present, the impervious charges may be divergent between the rate structures. However, the introduction of a gross area charge in the new rate structure modeled largely mimics the fee outcomes.

Using three rate metrics (fixed, impervious area, gross area) allows the fee to have components that relate to cost causation most directly, which is generally preferred in utility ratemaking. For example, some administrative costs for billing and collections efforts relate much more to the existence of a bill than to the size of the bill. Paying these costs from an impervious area rate shifts costs to large ratepayers while paying these costs from a fixed charge, as recommended, allocates the costs more equally across all ratepayers.

Within the City, a large portion of the rate base is composed of the Marine Corps Air Station, which to date represents uncollected billings. By shifting some pieces of cost recovery from the existing impervious area basis to a per account basis and a gross area basis, the impact of this nonpayment is more fairly accommodated within the remainder of the rate base.

Needed Ordinance Revisions

If a new rate structure is adopted, significant revisions to the City's stormwater utility fee ordinance will be needed. While the revisions are outside the ATM team's scope of work, the team has identified the following categories to focus on:

1. The definitions for residential dwelling classifications and nonresidential properties will need to be revised according to the new rate structure.
2. The rate structure and fee calculation description will need to be updated (refer to Rate Structure Design section above).
3. Any references to findings from the 2005 rate study should be eliminated or updated to reflect the current findings.
4. If applicable, references to the stormwater utility's responsibilities and management will need to be revised to take into account the multijurisdictional nature of the utility and any changes to the way funding occurs. The revisions can be based on current inter-governmental governmental agreements with the County.

Ongoing Billing Data Maintenance

Data maintenance processes for stormwater utility fee billing are crucial to enabling accurate and timely reporting and customer service. Property data from the City of Beaufort, including information on development, should be integrated and kept as current as possible for use in determining properties that are billable for the stormwater fee. A GIS layer representing impervious surfaces should be updated regularly as part of utility administration in response to development, demolition, and recognition of incorrect data. In addition to tax parcel data, other County data sources such as building permit applications and changes in improvement values can also be utilized as triggers to begin or update stormwater billing. Under rate structure E the County is able to provide this data maintenance seamlessly and most economically to the City.

Beaufort County Stormwater Rate Study
Final Report – Town of Bluffton
April 2016

Prepared by Applied Technology & Management

Assistance from Raftelis Financial Consultants

and Beaufort County Stormwater Utility

Contents

Executive Summary

Beaufort County, in cooperation with the City of Beaufort, and the Towns of Bluffton, Hilton Head Island, and Port Royal retained Applied Technology and Management (ATM) and its sub-consultant, Raftelis Financial Consultants to perform a rate study for the five stormwater utilities operated by the respective jurisdictions. The rate study was performed for each jurisdiction, and this report represents the results for the Town of Bluffton (herein, Town) within the context of the broader study.

The County is facing a declining rate base driven by annexations, steeply mounting costs for maintaining county-wide drainage infrastructure and complying with new MS4 requirements, and in need of continued capital project construction. The municipalities also face challenges which vary by jurisdiction, and these higher and more variable costs among the five jurisdictions were the driving force behind this rate study. The Town of Bluffton has been sufficiently supporting its stormwater program with the historical level of revenue, but the program has to shift in the near future to accommodate MS4 permit requirements and address capital needs.

The rate analyses performed in support of this rate study included six options for each jurisdiction, which can be modeled in the final rate model by choosing from a slate of scenarios. The options vary the rate metrics (impervious area, fixed charges per ratepayer, gross area), vary the way that shared costs are allocated between jurisdictions (by impervious area or by account), accommodate the existing administrative charges paid by each jurisdiction to the County (currently at $3.18 per SFU), accommodate the existing payments made by municipalities to the County for varying levels of water quality monitoring and public outreach, and accommodate a new charge by the County to each municipality for that municipality's proportionate share of the entire County's drainage infrastructure to be maintained by the County. The detailed description of the six options is as follows:

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

In these evaluations, simplified residential rates means a series of flat rate charges for impervious area similar to how the rate structure works now.

The recommended rate structure option from these evaluations is, for the Town of Bluffton, Option E. Under this option, the Town can use debt financing for large capital projects, would share administrative

costs allocated on a per-account basis, and fund Town operations and maintenance costs through variable charges.

As a part of the County's revised rate structure, customers in the Town are assessed by the County a new County-wide Stormwater Infrastructure (CWI) fee. This new fee will assist the County with funding stormwater infrastructure maintenance and repairs within all areas of the County including within municipal boundaries. This new fee was developed using a proportionate share of county-wide infrastructure costs (based on the amount of county-owned and maintained infrastructure within that jurisdiction) allocated across impervious and gross area within the jurisdiction. This percentage for the Town is 7.6%. In FY 2015-2016, under the previous rate structure, this equated to an additional charge of $18.13 per SFU. For FY 2016-2017 this will be $20.22 per SFU.

The County was the only jurisdiction to make rate structure changes in FY 2015-2016. At the time of this report, the Town had not yet opted to change the rate structure. Still, as a part of the County's revised rate structure, customers in the Town are assessed by the County the CWI fee.

Background

The southern coast of South Carolina has long been a desirable tourist destination and sought after place to live, in no small part due to the natural beauty surrounding the areas waterways. In recent years, Beaufort County has declared its intention to be a regional leader in environmental quality initiatives in order to promote this existing advantage. An important subset of environmental quality, especially in this region, is the effective management of stormwater runoff. Because the County is right on the coast, and is crossed by large water bodies otherwise, the imperative to manage stormwater runoff has immediate implications on water quality in the region, rather than somewhere downstream. Beaufort County and its underlying jurisdictions – the City of Beaufort, the Town of Port Royal, Town of Hilton Head Island, and Town of Bluffton – take this charge seriously, and have over time developed individual and cooperative programs to manage the public safety and water quality concerns related to stormwater runoff.

As these programs have matured over time, they have become more costly, and several jurisdictions now find themselves needing to evaluate their operating costs and investments in any needed capital improvement projects. The jurisdictions are interested in revising rates and exploring other financial tools to support program initiatives, especially capital spending, and have engaged Applied Technology & Management (ATM) and subcontractor Raftelis Financial Consultants (RFC) to conduct a rate structure analysis and rate studies similar to this study that was prepared for the County. This report summarizes the results of ATM's efforts on behalf of the Town of Bluffton within the context of the County-wide rate study.

Jurisdictional Cooperation

Although historically each jurisdiction has managed stormwater concerns indirectly through individual development standards and environmental ordinances, the group has been working together for many years to manage storm drainage and ensure an improved standard of living for residents of the County. This relationship has become more explicit over time, through the development of inter-governmental agreements and memoranda of understanding, and through a closer working relationship among staff of each local government.

The most outstanding example of cooperation relates to the administration of the five separate utilities. Since 2001, when the utilities went into effect, the County has provided administrative services, including billing, billing data maintenance, and customer service, in exchange for a small portion of the fee revenues for each underlying jurisdiction.

The County has historically been a significant service provider for drainage maintenance activities to each of the underlying jurisdictions, offering a menu of drainage infrastructure cleaning, maintenance, and repair activities at hourly rates. The patchwork nature of the jurisdictional boundaries lends itself to a cooperative approach to these activities whenever possible to maximize efficiencies in equipment and staff time.

Three of the five jurisdictions participating in the regional stormwater utility, including the Town, have recently been permitted as a municipal separate storm sewer systems (MS4) and become regulated under National Pollutant Discharge Elimination System (NPDES) MS4 permits. These permits require strict management of activities that impact the quality of stormwater runoff, such as construction and

industrial activities, as well as significant goals of public education and outreach in order to bolster the general public's ability to and interest in managing stormwater runoff responsibly.

Under the new permits, the jurisdictions will be required to perform maintenance activities on existing stormwater drainage infrastructure (as is done now), monitor water quality at outfalls, inspect facilities and infrastructure, and provide education and outreach to citizens. The costs for these activities can be limited if they are performed in coordination between jurisdictions, either across the entire county or in more geographically distinct regions (such as North of the Broad River).

Utility background

Each of the five jurisdictions has a separate stormwater utility, established by separate ordinance, allowing the jurisdiction to collect revenues dedicated to stormwater management activities. As mentioned above, each jurisdiction cooperates in the administration of the utility by funding a portion of the County staff and material costs, effectively creating a regional utility.

At the inception of the regional utility in 2001, each property was charged a stormwater fee (conveyed on the annual tax bill) based on the size of the property and a runoff factor associated with that type of property. At this time, all five jurisdictions were charging the same rate, such that a similar property in any jurisdiction would pay the same annual fee. By 2005, the County had access to aerial photography that allowed for a more reliable approach to fee calculation. Rather than use tabular property characteristics to develop the fee for an individual property, the fee could be calculated based on one characteristic that was deemed an important cost driver: impervious surface area. Some elements of the previous rate structure remained intact, but for developed properties, the utility replaced their existing rate structure with one based on impervious surface area as measured from aerial photography.

At its core, this is an industry standard approach to calculating stormwater fees. However, the data available to the County in 2005 were already several years out of date and of relatively poor quality (see Figure 1 below). In recent years, the County has been able to obtain much higher quality imagery on an annual basis and has been updating its impervious area measurements, the foundational billing data, as properties change.

Figure 1. Comparison of 2002 and 2015 Aerial Photography

Current Stormwater Utility Structure

Rate Structure

As defined by the ordinances passed in 2005, the jurisdictions share a rate structure, though each is allowed to charge rates necessary to generate the revenue needed within each individual jurisdiction. The current rate structure has three distinct parts: residential properties, nonresidential properties, and vacant lands. Because the stormwater fee is conveyed on the tax bill and the data should be related, every property falls into one of these three categories depending on its classification in the tax system. Generally, the basis for the rate is the amount of runoff a property generates, whether that be the result of impervious area or some other driver.

At the time of the last rate base and rate structure analysis, the median impervious surface area on single family residential properties was 4,906 square feet. This became the base unit (single family unit or SFU) for measuring impervious area on other types of properties as well. For property types within the tax system that have **residential** classifications, each equates to a distinct SFU equivalency factor in three "tiers." Residential property with 2,521 square feet or less of impervious area is tier 1. Tier 3 is residential property with 7,266 square feet or more of impervious area, and all residential property between these two impervious measures is tier 2. The tier equivalent SFU factor is multiplied by the per SFU rate for encompassing jurisdiction results in the rate. This concept is called simplified residential rates and is recommended in the newly modeled rate structures described in this study. The residential property types and SFU equivalencies are as follows:

Property Type	**Equivalent SFUs**
Tier 1 Single Family Unit (≤2,521 square feet)	0.50
Tier 2 Single Family Unit (2,522 to 7,265 square feet)	1.00
Tier 3 Single Family Unit (≥7,266 square feet)	1.50
Mobile Home	0.36
Apartment	0.39
Townhouse	0.60
Condominium	0.27

Where a single property includes multiple residential units, the equivalent SFU is per unit, such that an apartment complex property with 100 units would be charged for 0.39 (SFUs per unit) times 100 (number of units) times the rate to calculate the final fee.

Nonresidential properties represent the simplest of area of the current rate structure. For every property not classified as residential or vacant in the tax system, the stormwater fee is calculated based on the amount of impervious surface area on that property. This amount, divided by the 4,906 square foot SFU and multiplied by the per SFU rate, results in the final fee. There is no rounding or other manipulation of data.

Finally, **vacant** lands are presumed to have no impervious area, and are therefore not charged on that basis. They do still have an impact on the stormwater system, however, and should be responsible for a portion of the costs. At present, the rate structure allows for 'runoff factors' to be applied to vacant lands, with different factors used depending on a matrix of classification including whether a property is classified as agriculture, forestry, disturbed, or undisturbed.

Business Processes

In addition to the documented rate structure, there exist a number of business processes that have been developed over time to facilitate utility administration. Most of these processes are in line with the current ordinance but some have evolved to address data collection and maintenance difficulties that emerged from the existing rate structure. These include:

- the treatment of golf courses and parks as vacant land when in fact they may have a good deal of impervious area
- treatment of multi-use parcels (such as house and forested area on the same lot) as separate parcels with summed fees
- granting stormwater best management practices credit by overriding a property's fee to 1 SFU

During the course of these studies, the ATM team worked to identify any divergent business processes and compute updated metrics for the affected properties.

Rates

With the same rate structure in place since 2005, each jurisdiction has experienced increased revenue requirements and subsequently higher rates over time. Table 1 is a summary of each jurisdiction's rate history per SFU over time.

Table 1. Stormwater Fee Rates over Time

	2005-2006	*2007*	*2008*	*2009*	*2010*	*2011*	*2012-2014*
Beaufort County	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
City of Beaufort	$ 44.43	$ 44.43	$ 44.43	$ 44.43	$ 65.00	$ 65.00	$ 105.00
Town of Port Royal	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
Town of Bluffton	$ 49.00	$ 49.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00
Town of Hilton Head Island	$ 44.43	$ 50.76	$ 50.76	$ 83.23	$ 108.70	$ 108.70	$ 108.70

Town of Bluffton Stormwater Program

The Town has fostered a well-developed stormwater program for years, incorporating progressive elements such as master planning, watershed planning, and BMP inspections and maintenance. The Town has recently been issued an MS4 permit, and in turn, the program has begun expanding to include more comprehensive construction and post-construction BMP inspections, water quality monitoring, and other permit-required minimum control measures in advance of the deadline for measure implementation. In support of these initiatives, personnel and operational costs continue to grow at a steady pace, along with engineering and professional services.

The County has been financially responsible for maintenance and repair on county-wide infrastructure on and off County road rights of way, even within the municipal boundaries of the Town. More recently, the County has become unable to adequately provide stormwater services throughout the entirely of the unincorporated county with the available funds. That is, maintenance activities in parts of the county, especially those pockets within other jurisdictions, have been neglected in favor of addressing needs that could be met more economically. The Town of Bluffton has been greatly affected by this problem simply because of its distance from County headquarters. The City and Towns have not been receiving the stormwater management services they have come to expect from the County, those the County also endeavors to provide, because of funding shortfalls. This shortfall is to be addressed through the County-wide Infrastructure fee, described below, and the County expects to better be able to provide those services going forward.

There are a number of capital projects that have been identified by the Town for completion in the next several years, including master planning and watershed planning efforts, stormwater retrofits and a wetlands restoration.

Rate Study Approach

Due to the Town's growing stormwater program and the new requirements imposed by the MS4 permit, the Town has increasing costs over the coming years. The County, also faced with steeply increasing costs, initiated a rate study to achieve the most equitable cost recovery structure within the unincorporated County and the four municipalities. The rate study, detailed in this section, resulted in an optimal rate structure for all participating jurisdictions. For the sake of administrative simplicity and continuity, a single rate structure was recommended for all jurisdictions.

The ATM team was contracted to assist Beaufort County Stormwater (County) with a detailed stormwater utility rate study. For the unincorporated County and each of the four municipalities, the team conducted a full accounting of planned stormwater program costs over the next five years, which are expected to increase driven by the combination of existing operations and maintenance activities, a significant capital project backlog, and emerging NPDES compliance needs. The rate study was performed concurrent with the budgeting process for the fiscal year that began July 1, 2015, and resulted in the development and consideration of a number of rate structure options, described below.

Goals

The primary goal of the rate study was to model financially sufficient scenarios to support the jurisdictions' current and future stormwater programs. This included the following supporting objectives:

1. Determine the current and future (from MS4 compliance, jurisdictional growth, etc.) revenue requirements of each program;
2. Determine the most fair and reasonable way to recover revenues while balancing data maintenance efforts;
3. Facilitate future program visioning; and
4. Account for potential future collaboration and shared costs.

Through meetings, extensive model development and refinement, and collaborative review of the results, the team and the project remained accountable to these goals throughout the process.

Modeling

The primary deliverable from the rate study is a model that was developed to compare and contrast different financial scenarios for each of the jurisdictions. The model balances revenue requirements with funding from the stormwater fee and other possible sources. On the revenue requirements side, for each jurisdiction the ATM team considered existing revenue requirements, future MS4 permit related expenses, and capital needs. Revenue was modeled as the resulting revenue from several different rate structures as well as supplemental resources from bond issuances or other sources. With that basic structure in place, the model was refined to allow for allocation of costs across jurisdictions and rate components (see below for more information) in order to optimize rate equity.

The finalized model has been made available to each jurisdiction for ongoing use as a financial planning tool.

Data update

Much of the impervious area data originally developed for the 2005 rate study was created using low-quality 2002 aerial imagery. With the possible shift in rates and rate structure, it was critical to have improved source data. As a part of the rate study, the ATM team conducted a targeted review update (where needed) of approximately 5,000 parcel polygons within the GIS and across all of the jurisdictions in order to update the rate base.

At the conclusion of the effort, RFC reviewed and updated the impervious features as necessary on a total of 5,937 parcel polygons, deriving the features using the newest available imagery from 2013.

Rate Components

Fixed Costs

Many costs associated with the administration of the utility have little to do with specific characteristics of the land. Rather, they represent a public service to which each property owner (account holder) has equal access. Billing and collections, data management and updating, programming, and customer support fall within this category. These costs, then, are distributed evenly to each account holder by being allocable to a fixed charge per parcel.

Variable Costs: Impervious Surfaces Area and Gross Parcel Area

Impervious area is the area of land covered by a hard surface through which rainwater cannot pass, such as building footprints and parking lots. The amount of impervious area on a parcel is most directly related to the quantity of stormwater to be handled by the system. For bare soil and vegetated ground cover, some water will infiltrate into the ground—even during heavy rain—rather than run across the surface. For impervious surfaces, on the other hand, water cannot infiltrate into the ground. For that reason, impervious surface causes the peak discharge volume of runoff from a parcel of land to be higher than it would otherwise. Regardless of how the land is managed, runoff tends to gather nutrients and other potential pollutants. Because virtually none of this runoff (and the pollutants it carries) soaks into the ground, runoff from impervious area carries a greater volume of harmful materials toward receiving waterbodies than pervious area.

One unique aspect of the stormwater utilities in these jurisdictions is the wide variety of land use represented within each jurisdiction. Gross area is included as a component of the stormwater fee to capture the costs not solely related to impervious area runoff. As opposed to impervious area, gross land area contributes proportionately more to the nutrients and pollutants that stormwater runoff may pick up and less to the sheer volume of runoff to be managed. As discussed, pervious land can absorb some of the water that falls on it, so it does not contribute as much to runoff. However, pervious land still contributes pesticides, fertilizers, leaves, and other undesirable materials to the runoff that does occur. As such, stormwater costs related to water quality and quantity (most O&M costs) are allocable in some portion to gross land area.

In the costs described below, allocability to impervious area and gross area represents a relationship between a particular cost and the demand for that cost caused by a higher volume of stormwater (including higher levels of pollution) to be managed. An impervious and gross area rate structure allocates some cost to each of the two variables, in this case either allocating 80% or 90% of the variable costs to impervious area, and the remaining costs to gross area. The gross area units would include a declining block, such that large properties have more units of gross area than small properties, but the increase in units of gross area as overall parcel size increase are blunted by the declining block.

Cost Allocability

The proposed rate structures take into account a number of costs that vary by:

- Who provides the service,
- Who receives the service, and
- What drives the cost of the service (the existence of an account, impervious area or gross area)

This section describes the different elements of the jurisdictions' and utility's program costs and how they may be accommodated in the rate structures. The resulting modeled rates for each jurisdiction take into account the distribution of costs across all jurisdictions based on the chosen allocation scheme, and the particular rate base of that jurisdiction.

Jurisdictional Infrastructure O&M

Each of the five jurisdictions maintains its own stormwater drainage infrastructure and funds those costs from utility revenue. These costs are driven by impervious area and gross area in the jurisdiction, which contribute to stormwater runoff and nutrient loading. As such, the impervious and/or gross area component of the fee will include these costs. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Jurisdiction Capital Projects

Each of the five jurisdictions has an independent capital plan, and can determine whether bond funding or pay as you go funding (or paying with available unencumbered funds) is appropriate or necessary. Capital financing has been "pay-as-you-go" for most jurisdictions. An alternative is for jurisdictions to borrow money to build capital projects and pay this back over time. This option is described in the definitions as debt.

The cost drivers for capital projects are similar to those for regular O&M, and are allocable to impervious and gross area within a jurisdiction. Debt service (in the case of bond funding) or cash contributions to capital projects are included in the impervious and/or gross area components of a fee. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Debt

For some of the jurisdictions, including for the Town, capital needs outpace the funds available through fee revenue. Issuing debt in the form of revenue bonds is a viable alternative to fund these projects, and in some cases may be the most appropriate option. Debt financing is appropriate for large physical assets with long expected lives, generally constructed improvements. Most notable, debt service creates a mechanism for future ratepayers to help fund the infrastructure from which they still benefit. The exceptional environmental quality found in this region is one of the primary reasons people choose to live and work here, and at its most basic, every investment made in capital projects supports that fundamental tenet. Through debt funding of capital projects, ratepayers of the future can pay back into the program that promotes this high quality of life.

Issuance of revenue bonds will not affect a jurisdiction's existing covenants or caps. With revenue bonds, the jurisdiction's stormwater utility will be solely responsible for servicing that debt through utility revenues, and there is no risk to the greater entity.

County-wide Infrastructure O&M

The County maintains some larger drainage infrastructure within each of the four municipalities in addition to drainage infrastructure within the unincorporated area. County-wide infrastructure (defined as pipes and open ditches both in and out of rights of way that are owned or maintained by the County) maintenance costs have not been allocated to any ratepayers outside the unincorporated County prior to FY 15-16. That is, revenue from fees charged to property owners in the unincorporated County have been funding infrastructure maintenance, repair, and replacement activities throughout all five

jurisdictions. Currently, these activities have been limited in the incorporated areas because funding levels, supported by the unincorporated ratepayers only, are insufficient. The modified rate structure will share the County's costs for County-wide infrastructure maintenance across all the unincorporated and incorporated areas of the County based on linear feet of pipes and open ditches in each jurisdiction.

The cost drivers for operation and maintenance of county infrastructure are very similar to those for the various jurisdictional stormwater infrastructure systems. These costs may be recovered through an impervious and/or gross area fee component, the revenue from which supports County efforts. Revenue from this fee component would be returned to the service provider, the County.

The County's total budgeted County-wide infrastructure operation and maintenance cost is approximately $3.5 million in FY 2015-2016. A detailed analysis of the proportions of this County-wide infrastructure was prepared in 2015 by the County, and was used as the basis for the cost allocations to unincorporated areas of the County and to the municipalities. This inventory was conducted in GIS data layers and was made available to all jurisdictions by the County as part of this study. The analysis shows the proportions to be:

Unincorporated County	83.6%
City of Beaufort	2.2%
Town of Port Royal	0.8%
Town of Bluffton	7.6%
Town of Hilton Head Island	5.8%

Based on this proportional breakdown, the County began to convey a separate charge (as a new line on the bill, not to be added to or combined with the City/Towns fees), that bills this amount per SFU or IA/GA unit, as the rate structure would require. Final fee amounts are discussed in the Modified Rate Structure section, below.

Utility Administration

The County administers the cooperative utility for each of the five jurisdictions. Currently administrative fees are allocated across the impervious area rate base such that properties with a large number of SFUs of impervious area pay more in administrative fees than those with fewer SFUs.

Costs for this effort may be allocable to either the number of parcels or accounts for which data must be maintained, customer service must be provided, etc. These costs may instead be recovered via a fixed charge component charged to all utility customers. Alternatively, costs could be allocable to the impervious and/or gross area fee component if they are more closely related to the effort of maintaining the geospatial data or researching and addressing detailed questions from large, complex customers. Revenue from this fee component would be returned to the service provider, the County.

MS4 Compliance

The Town is newly subject to MS4 permit requirements. Even before this designation, the Town participated with the County in programs that comprised MS4 elements, such as water quality monitoring and education. For those jurisdictions subject to permit requirements, some program elements are fulfilled by each individual jurisdiction while others are provided cooperatively. Any

existing inter-governmental agreements and Memoranda of Understanding (MOU) may need to be revised if an alternate structure is chosen.

Cooperative Efforts

Monitoring

The County currently provides monitoring services within the boundaries of some municipalities, not including the Town. This relationship could be expanded to other jurisdictions if desired. These costs would be driven by the number of accounts and would be included in the fixed charge component of the fee, only in the jurisdictions where the County provides this monitoring service. Revenue from this fee component would be returned to the service provider, the County.

Public Education/Outreach

Currently, the jurisdictions participate in a cooperative public education and outreach scheme. Rather than implement separate agreements between each jurisdiction, this cost can be considered a per account cost and included in the fixed charge component of the fee, applicable to everyone in the County. Revenue from this fee component would be returned to the service provider, the County.

Individual Efforts

Other MS4 permit compliance activities may be done separately by each jurisdiction, and provided only to that jurisdiction. These costs are allocable to the impervious and/or gross area fee component and revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Modeled Options

Elements of Six Rate Structure Options

Simplified residential rate: Charge one of a series of flat rates, based on SFUs, to different classes of residential properties. This is how residential rates work in the current rate structure.

Continued application of the agricultural use policy: Properties legally under certain agricultural uses have limits placed on their stormwater fees by state law. The rate structure options will continue to follow this approach.

Updated source data: RFC reviewed and updated as necessary 5,937 parcel polygons throughout the five jurisdictions with the newest available imagery from 2013. The results of this update were used to model both the modified rate structure options and the current rate structure options, which make use of the newly measured impervious features.

Minimum charge: A minimum charge is a rate structure feature whereby once the amount a property owes in annual stormwater fees is computed it is compared to the minimum charge and if less, the minimum charge is applied to the property. The minimum charge is set to reflect the minimum amount of demand a property can actually place on the jurisdiction providing service. The minimum charge is represented as a fixed fee component and is charged to every property.

Options

A. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; pay-as-you-go capital financing

B. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; debt financing for some capital projects

C. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per-account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

D. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

E. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

F. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

Table 2. Modeled Rate Structure Options

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

Modified Rate Structure

ATM modeled four of the six options based on a modified rate structure design that relies more heavily on measured impervious area data but retains the basic backbone of the existing rate structure.

Fee Structure

The recommended fee includes three components: a fixed component to convey costs allocable by account, and two variable components: one based on gross area and one based on impervious area, to convey the costs that vary by property characteristic. With the exception of those explicitly exempt, every real property (which in some cases does not include land on the ground) has a stormwater fee calculated for it.

Bill Class

Every property falls into one of several bill classes, which determine fee calculation for that property. Residential properties are treated in a similar manner as they are currently, with SFU equivalents to represent the impervious area on each type of residential property. Gross area and fixed fee components are added to this portion of the residential fee. Vacant property is not charged for any impervious area, measured or assumed. It is, however, charged for the gross land area of the parcel and the fixed component of the fee, as described below. Exempt parcels are not charged any portion of the fee. Finally, all other properties are considered non-residential, non-vacant properties (herein called "commercial"), which are charged a per unit rate for impervious area, along with a fixed fee and gross area charge.

Rate Structure Design

Impervious Area Units

The existing impervious area unit of 4,906 has been retained for maximum equity between residential and commercial bill classes in impervious area charge. Residential properties are charged for impervious area based on the factors existing in the current rates structure. Commercial properties are charged per 4,906 square feet unit, or part thereof, of impervious area. Under the modified rate structure design, 80% of variable costs are funded through impervious area charges.

Gross Area Blocks

A gross area fee component is included for all properties that have a real parcel and parcel area found in GIS. The gross area charge is calculated in equivalent units as follows:

- Every property is charged $X for the first 2 acres of gross area. This means that every property getting a gross area fee is charged at least $X.
- For every acre above 2 acres, and up to 10 acres, the property is charged .5*$X per acre.
- For every acre above 10 acres, and up to 100 acres, the property is charged .4*$X per acre.
- For every acre above 100 acres, the property is charged .3*$X per acre.

This declining block structure maintains the important rate base of large properties. Under the modified rate structure design, 20% of variable costs are funded through gross area charges.

Exempt Properties and Special Cases

The modified rate structure design mirrors the current rate structure in exempt properties. Roads, railroads, private roads, and boat slip properties are exempt from stormwater fees. As described above, vacant (undeveloped) parcels are not exempt from the entire fee, but are not charged for the impervious area fee component.

Credit

For properties receiving credit for BMPs, that credit can be carried forward in this modified rate structure with accommodation for the previous rate structure, by utilizing a new set of credits policies and a manual developed by the County and made available to the Town.

Rate Study Results

ATM developed a spreadsheet-based rate model tool to model the way the individual jurisdiction and County-wide costs impact rates. The comprehensive model can be manipulated to calculate rates for each of the six options described above, as well as allow for manual override of the calculated rates to predict the revenue generation and sufficiency of a particular rate structure and rate choice.

ATM and Utility staff recommend rate structure Option E for the unincorporated County and therefore also recommend Options E or C for each underlying jurisdiction. Both Options C and E result in rates for a fixed charge, an impervious area charge, and a gross area charge. Option E includes the flexibility to issue debt and fund payments through the variable components of the charge. For the Town, ATM recommends Option E, which allows for but does not require debt issuances; potentially empowering the Town to more smoothly and equitably fund large capital projects. The recommended rates are as follows:

	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
Fixed Cost per Account	**$8.00**	**$8.00**	**$8.00**	**$8.00**
Cost per IA Unit	**$60.00**	**$60.00**	**$60.00**	**$60.00**
Cost per GA Unit	**$30.00**	**$30.00**	**$30.00**	**$30.00**

The proposed rate will allow the fund balance at the end of the planning period to reflect the balance at the beginning of the period, with some room for funding additional capital projects. Appendix A shows the modeled cash flow over the planning period.

Under Option E, administrative and regulatory compliance charges are allocated on a per account basis, infrastructure O&M costs are allocated based on the impervious and gross area, and no debt is issued within the planning period.

The Town is responsible for funding 7.6% of all county-wide infrastructure (CWI) operation and maintenance, with the allocation based on the amount of infrastructure to be maintained by the County that falls within each jurisdictional boundary, as described previously. Under the current rate structure, this is a $18.13 annual charge for an average house on a lot smaller than 2 acres. For the upcoming fiscal years, the CWI funding within each jurisdiction's boundaries on an SFU or IA/GA basis (depending on the rate structures chosen) are:

Table 3. County-wide Infrastructure Cost Breakdown by Jurisdiction

8/18/2015 CWI changes due to revised GIS dataset

	FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
CWI Cost Share on SFU Basis					
Unincorporated County	$ 45.30	$ 46.97	$ 47.50	$ 49.01	$ 49.71
City of Beaufort	$ 5.15	$ 5.74	$ 5.70	$ 5.78	$ 5.76
Town of Port Royal	$ 3.88	$ 4.33	$ 4.30	$ 4.36	$ 4.35
Town of Bluffton	$ 18.13	$ 20.22	$ 20.09	$ 20.38	$ 20.31
Town of Hilton Head Island	$ 5.52	$ 6.15	$ 6.11	$ 6.20	$ 6.18
CWI Cost Share on IA/GA Unit Basis					
Unincorporated County					
per IA Unit	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
per GA Unit	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
City of Beaufort					
per IA Unit	$ 4.10	$ 4.58	$ 4.55	$ 4.61	$ 4.60
per GA Unit	$ 1.34	$ 1.49	$ 1.48	$ 1.51	$ 1.50
Town of Port Royal					
per IA Unit	$ 3.13	$ 3.49	$ 3.47	$ 3.52	$ 3.51
per GA Unit	$ 0.78	$ 0.87	$ 0.87	$ 0.88	$ 0.88
Town of Bluffton					
per IA Unit	$ 17.83	$ 19.89	$ 19.76	$ 20.04	$ 19.97
per GA Unit	$ 2.25	$ 2.51	$ 2.49	$ 2.52	$ 2.52
Town of Hilton Head Island					
per IA Unit	$ 4.39	$ 4.89	$ 4.86	$ 4.93	$ 4.91
per GA Unit	$ 1.43	$ 1.60	$ 1.59	$ 1.61	$ 1.60

In the first planning year, FY 2015-2016, several shared costs (those for the regional stormwater master plan, public education and outreach, and water quality monitoring) are funded via inter-governmental agreements with the responsible parties. In this year only, these are represented as separate revenues and the costs are not allocated to the jurisdictions based on SFU or IA/GA unit calculation.

General Impacts of Rate Structure Changes

Under the proposed rate structure, the fee for a single family residential property 2 acres or less of land would receive the same $98 fee that it does currently. Other types of properties would see varied changes in their fees dependent upon the characteristics of each property. Customers will also see changes in response to the CWI charge (an extra line item on the tax bill, not related to the Town), and any fee adjustments in response to impervious area source data updates.

Needed Ordinance Revisions

Until a time when the rate structure is revised, no ordinance revisions are necessary.

Ongoing Billing Data Maintenance

Data maintenance processes for stormwater utility fee billing are crucial to enabling accurate and timely reporting and customer service. Property data from the Town of Bluffton, including information on development, should be integrated and kept as current as possible for use in determining properties that are billable for the stormwater fee. A GIS layer representing impervious surfaces should be updated regularly as part of utility administration in response to development, demolition, and recognition of incorrect data. In addition to tax parcel data, other County data sources such as building permit applications and changes in improvement values can also be utilized as triggers to begin or update stormwater billing. Under rate structure E the County is able to provide this data maintenance seamlessly and most economically to the Town.

Appendix A. Town of Bluffton Summary Sheet

		FY 2015-2016 Current RS	FY 2016-2017 Revised RS	FY 2017-2018 Revised RS	FY 2018-2019 Revised RS	FY 2019-2020 Revised RS
Rate Base						
0.75%	Accounts	10,897	10,979	11,061	11,144	11,228
1.25%	Billable IA Units	16,426	16,631	16,839	17,049	17,262
1.25%	Billable Equivalent GA Units	20,372	20,626	20,884	21,145	21,409
Costs						
	Stormwater O&M	$ 776,945	$ 799,503	$ 867,856	$ 895,141	$ 924,193
	Shared County Services					
	Town Portion: Administration & Regulatory Compliance	$ 41,669	$ 32,705	$ 33,156	$ 33,555	$ 34,128
	Town Portion: Monitoring & Outreach	$ -	$ 6,474	$ 6,024	$ 5,575	$ 5,575
	Capital Purchases & Projects	$ 2,398,925	$ 722,245	$ 565,000	$ 480,000	$ 150,000
	Total Town Costs (excl. debt service)	$ 3,175,870	$ 1,521,749	$ 1,432,856	$ 1,375,141	$ 1,074,193
	Total Town Costs payable to County for Shared Services	$ 41,669	$ 39,179	$ 39,180	$ 39,130	$ 39,703
Debt Service						
	Annual Debt Service	$ -	$ -	$ -	$ -	$ -
	Coverage Goal	1.30	1.30	1.30	1.30	1.30
	Actual Coverage					
Revised RS Stormwater Fee						
	Fixed Cost per Account, Calc		$ 3.57	$ 3.55	$ 3.52	$ 3.54
	Fixed Cost Collection Rate		97%	98%	99%	99%
	Fixed Cost per Account, Override		**$ 8.00**	**$ 8.00**	**$ 8.00**	**$ 8.00**
	Variable Costs, IA Proportion		80%	80%	80%	80%
	Variable Costs, GA Proportion		20%	20%	20%	20%
	Variable Costs, IA Unit Fee Calc		$ 73.21	$ 68.08	$ 64.53	$ 49.79
	IA Collection Rate		97%	98%	99%	99%
	Variable Costs, IA Unit Fee Override		**$ 60.00**	**$ 60.00**	**$ 60.00**	**$ 60.00**
	Variable Costs, GA Unit Fee Calc		$ 14.76	$ 13.73	$ 13.01	$ 10.04
	GA Collection Rate		97%	98%	99%	99%
	Variable Costs, GA Unit Fee Override		**$ 30.00**	**$ 30.00**	**$ 30.00**	**$ 30.00**
	Anticipated Town Fee Billings		$ 1,704,472	$ 1,725,348	$ 1,746,442	$ 1,767,814
Current RS Fee Alternative						
	Impervious Area Units	13,236				
	Fee	**$ 98.00**				
	Anticipated Town Fee Billings	$ 1,297,095				
	Collection Factor	99%				
	Administrative Fee per Paid Unit	$ 3.18				
Revenues						
	Anticipated Town Fee Revenue	$ 1,284,124	$ 1,653,338	$ 1,690,841	$ 1,728,978	$ 1,750,136
	Anticipated funds remitted to County for Utility Admin	$ (41,669)	$ (32,705)	$ (33,156)	$ (33,555)	$ (34,128)
	Anticipated funds remitted to County for Monitoring & Outrea	$ -	$ (6,474)	$ (6,024)	$ (5,575)	$ (5,575)
	Anticipated Remaining Town Fee Revenue	$ 1,242,456	$ 1,614,159	$ 1,651,661	$ 1,689,847	$ 1,710,433
	Additional Revenue Sources	$ 540,175	$ 75	$ 25	$ -	$ -
	Bond Issuance Proceeds	$ -	$ -	$ -	$ -	$ -
Fund Balance						
	FY Beginning Fund Balance	$ 1,871,197	$ 477,958	$ 570,442	$ 789,272	$ 1,103,978
	Total Costs	$ 3,175,870	$ 1,521,749	$ 1,432,856	$ 1,375,141	$ 1,074,193
	Total Revenues	$ 1,782,631	$ 1,614,234	$ 1,651,686	$ 1,689,847	$ 1,710,433
	Surplus (Deficit)	$ (1,393,239)	$ 92,485	$ 218,830	$ 314,706	$ 636,240
	FY End Fund Balance	**$ 477,958**	**$ 570,442**	**$ 789,272**	**$ 1,103,978**	**$ 1,740,218**

Beaufort County Stormwater Rate Study
Final Report – Town of Hilton Head Island
May 2016

Prepared by Applied Technology & Management

Assistance from Raftelis Financial Consultants

and Beaufort County Stormwater Utility

Contents

Executive Summary

Beaufort County, in cooperation with the City of Beaufort, and the Towns of Bluffton, Hilton Head Island, and Port Royal retained Applied Technology and Management (ATM) and its sub-consultant, Raftelis Financial Consultants to perform a rate study for the five stormwater utilities operated by the respective jurisdictions. The rate study was performed for each jurisdiction, and this report represents the results for the Town of Hilton Head Island (herein, Town) within the context of the broader study.

The County is facing a declining rate base driven by annexations, steeply mounting costs for maintaining county-wide drainage infrastructure and complying with new MS4 requirements, and in need of continued capital project construction. The municipalities also face challenges which vary by jurisdiction, and these higher and more variable costs among the five jurisdictions were the driving force behind this rate study. The Town of Hilton Head Island has been sufficiently supporting its stormwater program with the historical level of revenue, but the program is contemplating expanding its Extent of Service to include accepting individual developments' stormwater systems and associated BMPs for maintenance and in some cases for capital improvement. The program must also shift in the near future to accommodate MS4 permit requirements.

The rate analyses performed in support of this rate study included six options for each jurisdiction, which can be modeled in the final rate model by choosing from a slate of scenarios. The options vary the rate metrics (impervious area, fixed charges per ratepayer, gross area), vary the way that shared costs are allocated between jurisdictions (by impervious area or by account), accommodate the existing administrative charges paid by each jurisdiction to the County (currently at $3.18 per SFU), accommodate the existing payments made by municipalities to the County for varying levels of water quality monitoring and public outreach, and accommodate a new charge by the County to each municipality for that municipality's proportionate share of the entire County's drainage infrastructure to be maintained by the County. The detailed description of the six options is as follows:

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

In these evaluations, simplified residential rates means a series of flat rate charges for impervious area similar to how the rate structure works now.

The recommended rate structure option from these evaluations is, for the County and all municipalities, including the Town of Hilton Head Island, Option E. Under this option, the Town can use debt financing for large capital projects, would share administrative costs allocated on a per-account basis, and fund Town operations and maintenance costs through variable charges.

As a part of the County's revised rate structure, customers in the Town are assessed by the County a new County-wide Infrastructure (CWI) fee. This new fee will assist the County with funding stormwater infrastructure maintenance and repairs within all areas of the County including within municipal boundaries. This new fee was developed using a proportionate share of county-wide infrastructure costs (based on the amount of county-owned and maintained infrastructure within that jurisdiction) allocated across impervious and gross area within the jurisdiction. This percentage of county-owned and maintained infrastructure within the Town of Hilton Head Island is 5.8%. In FY 2015-2016, under the previous rate structure, this equated to an additional charge of $5.52 per SFU. For FY 2016-2017 and under the proposed rate structure, this will be $4.89 per impervious area unit and $1.60 per gross area unit. For a typical single family residential property on a one acre lot, the CWI will represent an additional $6.49 charge. This structure is described further within.

For the Town, the existing rates are $108.70 per SFU per year. Given the increasing number of service requests, resulting projects and associated costs, continuing with the current rate structure and rate will require that the Extent and or Level of Service of the Town's stormwater program be lessened in order for projected revenues to match projected expenditures. If this is thought to be unacceptable, in the future the rate must increase in order to provide the same level of service across an expanding extent of service.

Under the recommended Option E, the rate structure would change to one with a fixed charge per account, plus a variable charge for impervious area and another variable charge for gross lot area. For a "tier 2" (average house) residence in the Town on a one-acre lot, the recommended charge under Option E for FY16-17 would remain at $108.70 per year, with that rate divided between the three rate elements, although the total charges would be slightly higher due to the CWI fee. This rate is anticipated to generate $3.06 million in billings, and with the Town's high collection rate should support near term budgets without any program expansion. In following years, it is expected that this rate must increase to keep up with expected service provision. Although the FY16-17 Option E Town charge of $108.70 represents no increase on the Town's current annual charge for the Tier 2 residential properties, some ratepayers will experience a fee shift (increase or decrease) since the recommended rate structure is based on different factors.

Background

The southern coast of South Carolina has long been a desirable tourist destination and sought after place to live, in no small part due to the natural beauty surrounding the areas waterways. In recent years, Beaufort County has declared its intention to be a regional leader in environmental quality initiatives in order to promote this existing advantage. An important subset of environmental quality, especially in this region, is the effective management of stormwater runoff. Because the County is right on the coast, and is crossed by large water bodies otherwise, the imperative to manage stormwater runoff has immediate implications on water quality in the region, rather than somewhere downstream. Beaufort County and its underlying jurisdictions – the City of Beaufort, the Town of Port Royal, Town of Hilton Head Island, and Town of Bluffton – take this charge seriously, and have over time developed individual and cooperative programs to manage the public safety and water quality concerns related to stormwater runoff.

As these programs have matured over time, they have become more costly, and several jurisdictions now find themselves needing to evaluate their operating costs and investments in any needed capital improvement projects. The jurisdictions are interested in revising rates and exploring other financial tools to support program initiatives, especially capital spending, and have engaged Applied Technology & Management (ATM) and subcontractor Raftelis Financial Consultants (RFC) to conduct a rate structure analysis and rate studies similar to this study that was prepared for the County. This report summarizes the results of ATM's efforts on behalf of the Town of Hilton Head Island within the context of the County-wide rate study.

Jurisdictional Cooperation

Although historically each jurisdiction has managed stormwater concerns indirectly through individual development standards and environmental ordinances, the group has been working together for many years to manage storm drainage and ensure an improved standard of living for residents of the County. This relationship has become more explicit over time, through the development of inter-governmental agreements and memoranda of understanding, and through a closer working relationship among staff of each local government.

The most outstanding example of cooperation relates to the administration of the five separate utilities. Since 2001, when the utilities went into effect, the County has provided administrative services, including billing, billing data maintenance, and customer service, in exchange for a small portion of the fee revenues for each underlying jurisdiction.

The County has historically been a stakeholder service provider for drainage maintenance activities to each of the underlying jurisdictions, offering a menu of drainage infrastructure cleaning, maintenance, and repair activities at hourly rates. The patchwork nature of the jurisdictional boundaries lends itself to a cooperative approach to these activities whenever possible to maximize efficiencies in equipment and staff time.

Three of the five jurisdictions participating in the regional stormwater utility, including the Town, have recently been permitted as a municipal separate storm sewer systems (MS4) and become regulated under National Pollutant Discharge Elimination System (NPDES) MS4 permits. These permits require strict management of activities that impact the quality of stormwater runoff, such as construction and

industrial activities, as well as significant goals of public education and outreach in order to bolster the general public's ability to and interest in managing stormwater runoff responsibly.

Under the new permits, the jurisdictions will be required to perform maintenance activities on existing stormwater drainage infrastructure (as is done now), monitor water quality at outfalls, inspect facilities and infrastructure, and provide education and outreach to citizens. The costs for these activities can be reduced if they are performed in coordination between jurisdictions, either across the entire county or in more geographically distinct regions (such as North of the Broad River).

Utility background

Each of the five jurisdictions has a separate stormwater utility, established by separate ordinance, allowing the jurisdiction to collect revenues dedicated to stormwater management activities. As mentioned above, each jurisdiction cooperates in the administration of the utility by funding a portion of the County staff and material costs, effectively creating a regional utility.

At the inception of the regional utility in 2001, each property was charged a stormwater fee (conveyed on the annual tax bill) based on the size of the property and a runoff factor associated with that type of property. At this time, all five jurisdictions were charging the same rate, such that a similar property in any jurisdiction would pay the same annual fee. By 2005, the County had access to aerial photography that allowed for a more reliable approach to fee calculation. Rather than use tabular property characteristics to develop the fee for an individual property, the fee could be calculated based on one characteristic that was deemed an important cost driver: impervious surface area. Some elements of the previous rate structure remained intact, but for developed properties, the utility replaced their existing rate structure with one based on impervious surface area as measured from aerial photography.

At its core, this is an industry standard approach to calculating stormwater fees. However, the data available to the County in 2005 were already several years out of date and of relatively poor quality (see Figure 1 below). In recent years, the County has been able to obtain much higher quality imagery on an annual basis and has been updating its impervious area measurements, the foundational billing data, as properties change.

Figure 1. Comparison of 2002 and 2015 Aerial Photography

Current Stormwater Utility Structure

Rate Structure

As defined by the ordinances passed in 2005, the jurisdictions share a rate structure, though each is allowed to charge rates necessary to generate the revenue needed within each individual jurisdiction. The current rate structure has three distinct parts: residential properties, nonresidential properties, and vacant lands. Because the stormwater fee is conveyed on the tax bill and the data should be related, every property falls into one of these three categories depending on its classification in the tax system. Generally, the basis for the rate is the amount of runoff a property generates, whether that be the result of impervious area or some other driver.

At the time of the last rate base and rate structure analysis, the median impervious surface area on single family residential properties was 4,906 square feet. This became the base unit (single family unit or SFU) for measuring impervious area on other types of properties as well. For property types within the tax system that have **residential** classifications, each equates to a distinct SFU equivalency factor in three "tiers." Residential property with 2,521 square feet or less of impervious area is tier 1. Tier 3 is residential property with 7,266 square feet or more of impervious area, and all residential property between these two impervious measures is tier 2. The tier equivalent SFU factor is multiplied by the per SFU rate for encompassing jurisdiction results in the rate. This concept is called simplified residential rates and is recommended in the newly modeled rate structures described in this study. The residential property types and SFU equivalencies are as follows:

Property Type	**Equivalent SFUs**
Tier 1 Single Family Unit (≤2,521 square feet)	0.50
Tier 2 Single Family Unit (2,522 to 7,265 square feet)	1.00
Tier 3 Single Family Unit (≥7,266 square feet)	1.50
Mobile Home	0.36
Apartment	0.39
Townhouse	0.60
Condominium	0.27

Where a single property includes multiple residential units, the equivalent SFU is per unit, such that an apartment complex property with 100 units would be charged for 0.39 (SFUs per unit) times 100 (number of units) times the rate to calculate the final fee.

Nonresidential properties represent the simplest of area of the current rate structure. For every property not classified as residential or vacant in the tax system, the stormwater fee is calculated based on the amount of impervious surface area on that property. This amount, divided by the 4,906 square foot SFU and multiplied by the per SFU rate, results in the final fee. There is no rounding or other manipulation of data.

Finally, **vacant** lands are presumed to have no impervious area, and are therefore not charged on that basis. They do still have an impact on the stormwater system, however, and should be responsible for a portion of the costs. At present, the rate structure allows for 'runoff factors' to be applied to vacant lands, with different factors used depending on a matrix of classification including whether a property is classified as agriculture, forestry, disturbed, or undisturbed.

Business Processes

In addition to the documented rate structure, there exist a number of business processes that have been developed over time to facilitate utility administration. Most of these processes are in line with the current ordinance but some have evolved to address data collection and maintenance difficulties that emerged from the existing rate structure. These include:

- the treatment of golf courses and parks as vacant land when in fact they may have a good deal of impervious area
- treatment of multi-use parcels (such as house and forested area on the same lot) as separate parcels with summed fees
- granting stormwater best management practices credit by overriding a property's fee to 1 SFU

During the course of these studies, the ATM team worked to identify any divergent business processes and compute updated metrics for the affected properties.

Rates

With the same rate structure in place since 2005, each jurisdiction has experienced increased revenue requirements and subsequently higher rates over time. Table 1 is a summary of each jurisdiction's rate history per SFU over time.

Table 1. Stormwater Fee Rates over Time

	2005-2006	*2007*	*2008*	*2009*	*2010*	*2011*	*2012-2014*
Beaufort County	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
City of Beaufort	$ 44.43	$ 44.43	$ 44.43	$ 44.43	$ 65.00	$ 65.00	$ 105.00
Town of Port Royal	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
Town of Bluffton	$ 49.00	$ 49.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00
Town of Hilton Head Island	$ 44.43	$ 50.76	$ 50.76	$ 83.23	$ 108.70	$ 108.70	$ 108.70

Town of Hilton Head Island Stormwater Program

The Town has fostered a well-developed stormwater program for years, incorporating progressive elements such as water quality monitoring, public education, and permitting in addition to standard drainage system maintenance and capital improvement projects. The Town has recently been issued an MS4 permit, and in turn, the program will soon begin expanding to include more comprehensive construction and post-construction BMP inspections, water quality monitoring, and other permit-required minimum controls. In support of these initiatives, personnel and operational costs continue to grow at a steady pace, along with engineering and professional services.

The County has been financially responsible for maintenance and repair on county-wide infrastructure on and off County road rights of way, even within the municipal boundaries of the Town. More recently, the County has become unable to adequately provide stormwater services throughout the entirely of the unincorporated county with the available funds. That is, maintenance activities in parts of the county, especially those pockets within other jurisdictions, have been neglected in favor of addressing needs that could be met more economically. The Town of Hilton Head Island has been hardest hit by this problem because of its geographic isolation and distance from County staff and equipment. The City and Towns have not been receiving the stormwater management services they have come to expect from the County, those the County also endeavors to provide, because of funding shortfalls. This shortfall is to be addressed through the County-wide Infrastructure fee, described below, and the County expects to better be able to provide those services going forward.

There are a number of capital projects that have been identified by the Town for completion in the next several years, including master planning, pipe upgrades and repairs, pump station repairs, and street drainage and channel improvements. In addition to these capital costs, the Town has entered into Drainage and Maintenance Agreements with ten of the eleven major planned unit developments (PUD's). Under these agreements, the Town is obligated to maintain (or fund maintenance and repairs of) the stormwater systems and BMPs within these private developments. While only the larger PUD systems have been accepted thus far, it is anticipated that smaller private residential subdivisions will attempt to enter into a similar agreement with the Town, causing the Town's costs for this service to rise.

Rate Study Approach

Due to the Town's growing stormwater program and the new requirements imposed by the MS4 permit, the Town will face increasing costs over the coming years. The County, also faced with steeply increasing costs, initiated a rate study to achieve the most equitable cost recovery structure within the unincorporated County and the four municipalities. The rate study, detailed in this section, resulted in an optimal rate structure for all participating jurisdictions. For the sake of administrative simplicity and continuity, a single rate structure was recommended for all jurisdictions.

The ATM team was contracted to assist Beaufort County Stormwater (County) with a detailed stormwater utility rate study. For the unincorporated County and each of the four municipalities, the team conducted a full accounting of planned stormwater program costs over the next five years, which are expected to increase driven by the combination of existing operations and maintenance activities, a significant capital project backlog, and emerging NPDES compliance needs. The rate study was performed concurrent with the budgeting process for the fiscal year that began July 1, 2015, and resulted in the development and consideration of a number of rate structure options, described below.

Goals

The primary goal of the rate study was to model financially sufficient scenarios to support the jurisdictions' current and future stormwater programs. This included the following supporting objectives:

1. Determine the current and future (from MS4 compliance, jurisdictional growth, etc.) revenue requirements of each program;
2. Determine the most fair and reasonable way to recover revenues while balancing data maintenance efforts;
3. Facilitate future program visioning; and
4. Account for potential future collaboration and shared costs.

Through numerous meetings, extensive model development and refinement, and collaborative review of the results, the team and the project remained accountable to these goals throughout the process.

Modeling

The primary deliverable from the rate study is a model that was developed to compare and contrast different financial scenarios for each of the jurisdictions. The model balances revenue requirements with funding from the stormwater fee and other possible sources. On the revenue requirements side, for each jurisdiction the ATM team considered existing revenue requirements, future MS4 permit related expenses, and capital needs. Revenue was modeled as the resulting revenue from several different rate structures as well as supplemental resources from bond issuances or other sources. With that basic structure in place, the model was refined to allow for allocation of costs across jurisdictions and rate components (see below for more information) in order to optimize rate equity.

The finalized model has been made available to each jurisdiction for ongoing use as a financial planning tool. The Town may use this to analyze program expansion and revenue requirements in future budget development.

Data update

Much of the impervious area data originally developed for the 2005 rate study was created using low-quality 2002 aerial imagery. With the possible shift in rates and rate structure, it was critical to have improved source data. As a part of the rate study, the ATM team conducted a targeted review update (where needed) of approximately 5,000 parcel polygons within the GIS and across all of the jurisdictions in order to update the rate base.

At the conclusion of the effort, RFC reviewed and updated the impervious features as necessary on a total of 5,937 parcel polygons, deriving the features using the newest available imagery from 2013.

Rate Components

Fixed Costs

Many costs associated with the administration of the utility have little to do with specific characteristics of the land. Rather, they represent a public service to which each property owner (account holder) has equal access. Billing and collections, data management and updating, programming, and customer support fall within this category. These costs, then, are distributed evenly to each account holder by being allocable to a fixed charge per parcel.

Variable Costs: Impervious Surfaces Area and Gross Parcel Area

Impervious area is the area of land covered by a hard surface through which rainwater cannot pass, such as building footprints and parking lots. The amount of impervious area on a parcel is most directly related to the quantity of stormwater to be handled by the system. For bare soil and vegetated ground cover, some water will infiltrate into the ground—even during heavy rain—rather than run across the surface. For impervious surfaces, on the other hand, water cannot infiltrate into the ground. For that reason, impervious surface causes the peak discharge volume of runoff from a parcel of land to be higher than it would otherwise. Regardless of how the land is managed, runoff tends to gather nutrients and other potential pollutants. Because virtually none of this runoff (and the pollutants it carries) soaks into the ground, runoff from impervious area carries a greater volume of harmful materials toward receiving waterbodies than pervious area.

One unique aspect of the stormwater utilities in these jurisdictions is the wide variety of land use represented within each jurisdiction. Gross area is included as a component of the stormwater fee to capture the costs not solely related to impervious area runoff. As opposed to impervious area, gross land area contributes proportionately more to the nutrients and pollutants that stormwater runoff may pick up and less to the sheer volume of runoff to be managed. As discussed, pervious land can absorb some of the water that falls on it, so it does not contribute as much to runoff. However, pervious land still contributes pesticides, fertilizers, leaves, and other undesirable materials to the runoff that does occur. As such, stormwater costs related to water quality and quantity (most O&M costs) are allocable in some portion to gross land area.

In the costs described below, allocability to impervious area and gross area represents a relationship between a particular cost and the demand for that cost caused by a higher volume of stormwater (including higher levels of pollution) to be managed. An impervious and gross area rate structure allocates some cost to each of the two variables, in this case either allocating 80% or 90% of the variable costs to impervious area, and the remaining costs to gross area. The gross area units would include a

declining block, such that large properties have more units of gross area than small properties, but the increase in units of gross area as overall parcel size increase are blunted by the declining block.

Cost Allocability

The proposed rate structures take into account a number of costs that vary by:

- Who provides the service,
- Who receives the service, and
- What drives the cost of the service (the existence of an account, impervious area or gross area)

This section describes the different elements of the jurisdictions' and utility's program costs and how they may be accommodated in the rate structures. The resulting modeled rates for each jurisdiction take into account the distribution of costs across all jurisdictions based on the chosen allocation scheme, and the particular rate base of that jurisdiction.

Jurisdictional Infrastructure O&M

Each of the five jurisdictions maintains its own stormwater drainage infrastructure and funds those costs from utility revenue. These costs are driven by impervious area and gross area in the jurisdiction, which contribute to stormwater runoff and nutrient loading. As such, the impervious and/or gross area component of the fee will include these costs. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Jurisdiction Capital Projects

Each of the five jurisdictions has an independent capital plan, and can determine whether bond funding or pay as you go funding (or paying with available unencumbered funds) is appropriate or necessary. Capital financing has been "pay-as-you-go" for most jurisdictions. An alternative is for jurisdictions to borrow money to build capital projects and pay this back over time. This option is described in the definitions as debt.

The cost drivers for capital projects are similar to those for regular O&M, and are allocable to impervious and gross area within a jurisdiction. Debt service (in the case of bond funding) or cash contributions to capital projects are included in the impervious and/or gross area components of a fee. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Debt

For some of the jurisdictions, including for the Town, capital needs outpace the funds available through fee revenue. Issuing debt in the form of revenue bonds is a viable alternative to fund these projects, and in some cases may be the most appropriate option. Debt financing is appropriate for large physical assets with long expected lives, generally constructed improvements. Most notable, debt service creates a mechanism for future ratepayers to help fund the infrastructure from which they still benefit. The exceptional environmental quality found in this region is one of the primary reasons people choose to live and work here, and at its most basic, every investment made in capital projects supports that fundamental tenet. Through debt funding of capital projects, ratepayers of the future can pay back into the program that promotes this high quality of life.

Issuance of revenue bonds will not affect a jurisdiction's existing covenants or caps. With revenue bonds, the jurisdiction's stormwater utility will be solely responsible for servicing that debt through utility revenues, and there is no risk to the greater entity.

County-wide Infrastructure O&M

The County maintains some larger drainage infrastructure within each of the four municipalities in addition to drainage infrastructure within the unincorporated area. County-wide infrastructure (defined as pipes and open ditches both in and out of rights of way that are owned or maintained by the County) maintenance costs have not been allocated to any ratepayers outside the unincorporated County prior to FY 15-16. That is, revenue from fees charged to property owners in the unincorporated County have been funding infrastructure maintenance, repair, and replacement activities throughout all five jurisdictions. Currently, these activities have been limited in the incorporated areas because funding levels, supported by the unincorporated ratepayers only, are insufficient. The modified rate structure will share the County's costs for County-wide infrastructure maintenance across all the unincorporated and incorporated areas of the County based on linear feet of pipes and open ditches in each jurisdiction.

The cost drivers for operation and maintenance of county infrastructure are very similar to those for the various jurisdictional stormwater infrastructure systems. These costs may be recovered through an impervious and/or gross area fee component, the revenue from which supports County efforts. Revenue from this fee component would be returned to the service provider, the County.

The County's total budgeted County-wide infrastructure operation and maintenance cost is approximately $3.5 million in FY 2015-2016. A detailed analysis of the linear proportions of this County-wide infrastructure was prepared in 2015 by the County, and was used as the basis for the cost allocations to unincorporated areas of the County and to the municipalities. This inventory was conducted in GIS data layers and was made available to all jurisdictions by the County as part of this study. The analysis shows the proportions to be:

Unincorporated County	83.6%
City of Beaufort	2.2%
Town of Port Royal	0.8%
Town of Bluffton	7.6%
Town of Hilton Head Island	5.8%

Based on this proportional breakdown, the County began to convey a separate charge (as a new line on the bill, not to be added to or combined with the City/Towns fees), that bills this amount per SFU or IA/GA unit, as the rate structure would require. Final fee amounts are discussed in the Modified Rate Structure section, below.

Utility Administration

The County administers the cooperative utility for each of the five jurisdictions. Currently administrative fees are allocated across the impervious area rate base such that properties with a large number of SFUs of impervious area pay more in administrative fees than those with fewer SFUs.

Costs for this effort may be allocable to either the number of parcels or accounts for which data must be maintained, customer service must be provided, etc. These costs may instead be recovered via a fixed

charge component charged to all utility customers. Alternatively, costs could be allocable to the impervious and/or gross area fee component if they are more closely related to the effort of maintaining the geospatial data or researching and addressing detailed questions from large, complex customers. Revenue from this fee component would be returned to the service provider, the County.

MS4 Compliance

The Town is newly subject to MS4 permit requirements. Even before this designation, the Town participated with the County in programs that comprised MS4 elements, such as water quality monitoring and education. For those jurisdictions subject to permit requirements, some program elements are fulfilled by each individual jurisdiction while others are provided cooperatively. Any existing inter-governmental agreements and Memoranda of Understanding (MOU) may need to be revised if an alternate structure is chosen.

Cooperative Efforts

Monitoring

The County currently provides monitoring services within the boundaries of some municipalities, not including the Town. This relationship could be expanded to other jurisdictions if desired. These costs would be driven by the number of accounts and would be included in the fixed charge component of the fee, only in the jurisdictions where the County provides this monitoring service. Revenue from this fee component would be returned to the service provider, the County.

Public Education/Outreach

Currently, the jurisdictions participate in a cooperative public education and outreach scheme. Rather than implement separate agreements between each jurisdiction, this cost can be considered a per account cost and included in the fixed charge component of the fee, applicable to everyone in the County. Revenue from this fee component would be returned to the service provider, the County.

Individual Efforts

Other MS4 permit compliance activities may be done separately by each jurisdiction, and provided only to that jurisdiction. These costs are allocable to the impervious and/or gross area fee component and revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Modeled Options

Elements of Six Rate Structure Options

Simplified residential rate: Charge one of a series of flat rates, based on SFUs, to different classes of residential properties. This is how residential rates work in the current rate structure.

Continued application of the agricultural use policy: Properties legally under certain agricultural uses have limits placed on their stormwater fees by state law. The rate structure options will continue to follow this approach.

Updated source data: RFC reviewed and updated as necessary 5,937 parcel polygons throughout the five jurisdictions with the newest available imagery from 2013. The results of this update were used to model both the modified rate structure options and the current rate structure options, which make use of the newly measured impervious features.

Minimum charge: A minimum charge is a rate structure feature whereby once the amount a property owes in annual stormwater fees is computed it is compared to the minimum charge and if less, the minimum charge is applied to the property. The minimum charge is set to reflect the minimum amount of demand a property can actually place on the jurisdiction providing service. The minimum charge is represented as a fixed fee component and is charged to every property.

Options

A. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; pay-as-you-go capital financing

B. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; debt financing for some capital projects

C. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per-account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

D. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

E. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

F. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

Table 2. Modeled Rate Structure Options

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

Modified Rate Structure

ATM modeled four of the six options based on a modified rate structure design that relies more heavily on measured impervious area data but retains the basic backbone of the existing rate structure.

Fee Structure

The recommended fee includes three components: a fixed component to convey costs allocable by account, and two variable components: one based on gross area and one based on impervious area, to convey the costs that vary by property characteristic. With the exception of those explicitly exempt, every real property (which in some cases does not include land on the ground) has a stormwater fee calculated for it.

Bill Class

Every property falls into one of several bill classes, which determine fee calculation for that property. Residential properties are treated in a similar manner as they are currently, with SFU equivalents to represent the impervious area on each type of residential property. Gross area and fixed fee components are added to this portion of the residential fee. Vacant property is not charged for any impervious area, measured or assumed. It is, however, charged for the gross land area of the parcel and the fixed component of the fee, as described below. Exempt parcels are not charged any portion of the fee. Finally, all other properties are considered non-residential, non-vacant properties (herein called "commercial"), which are charged a per unit rate for impervious area, along with a fixed fee and gross area charge.

Rate Structure Design

Impervious Area Units

The existing impervious area unit of 4,906 has been retained for maximum equity between residential and commercial bill classes in impervious area charge. Residential properties are charged for impervious area based on the factors existing in the current rates structure. Commercial properties are charged per 4,906 square feet unit, or part thereof, of impervious area. Under the modified rate structure design, 80% of variable costs are funded through impervious area charges.

Gross Area Blocks

A gross area fee component is included for all properties that have a real parcel and parcel area found in GIS. The gross area charge is calculated in equivalent units as follows:

- Every property is charged $X for the first 2 acres of gross area. This means that every property getting a gross area fee is charged at least $X, where X is the rate amount calculated by the Town for the gross area rate component to support a proposed budget.
- For every acre above 2 acres, and up to 10 acres, the property is charged .5*$X per acre.
- For every acre above 10 acres, and up to 100 acres, the property is charged .4*$X per acre.
- For every acre above 100 acres, the property is charged .3*$X per acre.

This declining block structure maintains the important rate base of large properties. Under the modified rate structure design, about 20% of variable costs are funded through gross area charges.

Exempt Properties and Special Cases

The modified rate structure design mirrors the current rate structure in exempt properties. Roads, railroads, private roads, and boat slip properties are exempt from stormwater fees. As described above, vacant (undeveloped) parcels are not exempt from the entire fee, but are not charged for the impervious area fee component.

Credit

For properties receiving credit for BMPs, that credit can be carried forward in this modified rate structure, by utilizing a new set of credits policies and a manual developed by the County and made available to the Town.

Rate Study Results

ATM developed a spreadsheet-based rate model tool to model the way the individual jurisdiction and County-wide costs impact rates. The comprehensive model can be manipulated to calculate rates for each of the six options described above, as well as allow for manual override of the calculated rates to predict the revenue generation and sufficiency of a particular rate structure and rate choice.

ATM and Utility staff recommend rate structure Option E for the unincorporated County and therefore also recommend Options E or C for each underlying jurisdiction. Both Options C and E result in rates for a fixed charge, an impervious area charge, and a gross area charge. Option E includes the flexibility to issue debt and fund payments through the variable components of the charge. For the Town, ATM recommends Option E, which allows for but does not require debt issuances; potentially empowering the Town to more smoothly and equitably fund large capital projects. For the Town of Hilton Head Island, based on a model with planned capital needs and without the addition of large O&M needs

driven by taking on PUD infrastructure, the recommended rates are as follows. These rates sufficiently fund the currently planned program in fiscal years 2016-2017 through 2019-2020, however this does not include any expansion of the program's level or extent of service.

	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
Fixed Cost per Account	**$24.00**	**$24.00**	**$24.00**	**$24.00**
Cost per IA Unit	**$75.70**	**$100.00**	**$100.00**	**$100.00**
Cost per GA Unit	**$9.00**	**$15.00**	**$15.00**	**$15.00**

Fiscal Year 2017-2018 requires an increase in rates as the Town has an unusually high capital project budget in that year. The higher rates are not strictly needed beyond that year under the current budget scenario, but additional revenue could be used to partially accommodate the expansion of services and PUD O&M requirements. The additional costs represented by PUD operation and maintenance are not fully known, but could represent increases over these rates for the typical house on a one-acre lot on the order of 400% over the planning period.

Under Option E, administrative and regulatory compliance charges are allocated on a per account basis, infrastructure O&M costs are allocated based on the impervious and gross area, and no additional debt is issued within the planning period. As previously described, the Town's ratepayers will be responsible for funding the maintenance of the County stormwater infrastructure within the Town limits, or 5.8% of all county-wide infrastructure (CWI). Under the proposed rate structure, this is a $6.49 annual charge for a typical house on a one-acre lot for FY 2016-2017. For the upcoming fiscal years, the CWI funding within each jurisdiction's boundaries on an SFU or IA/GA basis (depending on the rate structures chosen) are:

Table 3. County-wide Infrastructure Cost Breakdown by Jurisdiction

8/18/2015 CWI changes due to revised GIS dataset

	FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
CWI Cost Share on SFU Basis					
Unincorporated County	$ 45.30	$ 46.97	$ 47.50	$ 49.01	$ 49.71
City of Beaufort	$ 5.15	$ 5.74	$ 5.70	$ 5.78	$ 5.76
Town of Port Royal	$ 3.88	$ 4.33	$ 4.30	$ 4.36	$ 4.35
Town of Bluffton	$ 18.13	$ 20.22	$ 20.09	$ 20.38	$ 20.31
Town of Hilton Head Island	$ 5.52	$ 6.15	$ 6.11	$ 6.20	$ 6.18
CWI Cost Share on IA/GA Unit Basis					
Unincorporated County					
per IA Unit	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
per GA Unit	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
City of Beaufort					
per IA Unit	$ 4.10	$ 4.58	$ 4.55	$ 4.61	$ 4.60
per GA Unit	$ 1.34	$ 1.49	$ 1.48	$ 1.51	$ 1.50
Town of Port Royal					
per IA Unit	$ 3.13	$ 3.49	$ 3.47	$ 3.52	$ 3.51
per GA Unit	$ 0.78	$ 0.87	$ 0.87	$ 0.88	$ 0.88
Town of Bluffton					
per IA Unit	$ 17.83	$ 19.89	$ 19.76	$ 20.04	$ 19.97
per GA Unit	$ 2.25	$ 2.51	$ 2.49	$ 2.52	$ 2.52
Town of Hilton Head Island					
per IA Unit	$ 4.39	$ 4.89	$ 4.86	$ 4.93	$ 4.91
per GA Unit	$ 1.43	$ 1.60	$ 1.59	$ 1.61	$ 1.60

In the first planning year, FY 2015-2016, several shared costs (those for the regional stormwater master plan, public education and outreach, and water quality monitoring) are funded via inter-governmental agreements with the responsible parties. In this year only, these are represented as separate revenues and the costs are not allocated to the jurisdictions based on SFU or IA/GA unit calculation.

General Impacts of Rate Structure Changes

The recommended rate structure incorporates a fixed charge per account (parcel), plus two variable charges: one for impervious area on the parcel and one for gross parcel area. It also continues the practice of using simplified residential rates for residential properties of varying types from single family detached through condominium units. Because the current billing practices for large undeveloped tracts include an impervious area estimation process while the new rates structures do not charge an impervious area fee if there is no impervious area present, the impervious charges may be divergent between the rate structures. However, the introduction of a gross area charge in the new rate structure modeled largely mimics the fee outcomes.

Using three rate metrics (fixed, impervious area, gross area) allows the fee to have components that relate to cost causation most directly, which is generally preferred in utility ratemaking. For example, some administrative costs for billing and collections efforts relate much more to the existence of a bill than to the size of the bill. Paying these costs from an impervious area rate shifts costs to large ratepayers while paying these costs from a fixed charge, as recommended, allocates the costs more equally across all ratepayers.

Under the proposed rate structure for the year FY2016-2017, the fee for an average single family residential property on 2 acres or less of land would receive the same $108.70 fee that it does currently. Other types of properties would see varied changes in their fees dependent upon the characteristics of each property.

Revisions to Intergovernmental Agreement and Town Code

. On September 28, 2015, the Beaufort County Council approved the recommendations of the Beaufort County Stormwater Rate Study by adopting rate structure Option E. The Town and County will need to revise the Stormwater Utility Intergovernmental Agreement to incorporate the rate structure and rate-related scheduling deadlines. While these revisions are outside the ATM team's scope of work, the team has identified the following categories to focus on:

1. The definitions for residential dwelling classifications and nonresidential properties will need to be revised according to the new rate structure.
2. The rate structure and fee calculation description will need to be updated (refer to Rate Structure Design section above).
3. Any references to findings from the 2005 rate study should be eliminated or updated to reflect the current findings.
4. If applicable, references to the stormwater utility's responsibilities and management will need to be revised to take into account the multijurisdictional nature of the utility and any changes to the way funding occurs. The revisions can be based on current inter-governmental governmental agreements with the County.

Ongoing Billing Data Maintenance

Data maintenance processes for stormwater utility fee billing are crucial to enabling accurate and timely reporting and customer service. Property data from the Town of Hilton Head Island, including information on development, should be integrated and kept as current as possible for use in determining properties that are billable for the stormwater fee. A GIS layer representing impervious surfaces should be updated regularly as part of utility administration in response to development, demolition, and recognition of incorrect data. In addition to tax parcel data, other County data sources such as building permit applications and changes in improvement values can also be utilized as triggers to begin or update stormwater billing. Under rate structure E the County is able to provide this data maintenance seamlessly and most economically to the Town.

Beaufort County Stormwater Rate Study
Final Report – Town of Port Royal
April 2016

Prepared by Applied Technology & Management

Assistance from Raftelis Financial Consultants

and Beaufort County Stormwater Utility

Contents

Executive Summary

Beaufort County, in cooperation with the City of Beaufort, and the Towns of Bluffton, Hilton Head Island, and Port Royal retained Applied Technology and Management (ATM) and its sub-consultant, Raftelis Financial Consultants to perform a rate study for the five stormwater utilities operated by the respective jurisdictions. The rate study was performed for each jurisdiction, and this report represents the results for the Town of Port Royal (herein, Town) within the context of the broader study.

The County is facing a declining rate base driven by annexations, steeply mounting costs for maintaining county-wide drainage infrastructure and complying with new MS4 requirements, and in need of continued capital project construction. The municipalities also face challenges which vary by jurisdiction, and these higher and more variable costs among the five jurisdictions were the driving force behind this rate study. The Town of Port Royal has been sufficiently supporting its stormwater program with the historical level of revenue, but the program has to shift in the near future to accommodate anticipated MS4 permit requirements and address capital needs.

The rate analyses performed in support of this rate study included six options for each jurisdiction, which can be modeled in the final rate model by choosing from a slate of scenarios. The options vary the rate metrics (impervious area, fixed charges per ratepayer, gross area), vary the way that shared costs are allocated between jurisdictions (by impervious area or by account), accommodate the existing administrative charges paid by each jurisdiction to the County (currently at $3.18 per SFU), accommodate the existing payments made by municipalities to the County for varying levels of water quality monitoring and public outreach, and accommodate a new charge by the County to each municipality for that municipality's proportionate share of the entire County's drainage infrastructure to be maintained by the County. The detailed description of the six options is as follows:

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

In these evaluations, simplified residential rates means a series of flat rate charges for impervious area similar to how the rate structure works now.

The recommended rate structure option from these evaluations is, for the Town of Port Royal, Option E. Under this option, the Town can use debt financing for large capital projects, would share administrative

costs allocated on a per-account basis, and fund Town operations and maintenance costs through variable charges.

As a part of the County's revised rate structure, customers in the Town are assessed by the County a new County-wide Stormwater Infrastructure (CWI) fee. This new fee will assist the County with funding stormwater infrastructure maintenance and repairs within all areas of the County including within municipal boundaries. This new fee was developed using a proportionate share of county-wide infrastructure costs (based on the amount of county-owned and maintained infrastructure within that jurisdiction) allocated across impervious and gross area within the jurisdiction. This percentage for the Town is 0.8%. In FY 2015-2016, under the previous rate structure, this equated to an additional charge of $5.3.88 per SFU. For FY 2016-2017 and under the proposed rate structure, this will be $3.49 per impervious area unit and $0.87 per gross area unit. For a typical single family residential property on a one acre lot, the CWI will represent an additional $4.36 charge. This structure is described further within.

The County was the only jurisdiction to make rate structure changes in FY 2015-2016. As of the date of this report, some municipalities including the Town, expect to make these changes for FY 2016-2017.

For the Town, the existing rates are $50 per SFU per year. Continuing with the current rate structure these rates would need to escalate over the coming years to $70 per SFU per year by FY 2019-2020. This is a 40% increase.

Under the recommended Option E, the rate structure will change to one with a fixed charge per account, plus a variable charge for impervious area and another variable charge for gross lot area. For a "tier 2" (average house) residence in the Town on a one acre lot, the charge under Option E would become $70 in year by FY 2019-2020. This is the same increase these customers would see under the current rate structure, but it is ultimately more fairly broken down between cost recovery categories. This increase, which is still 40% for typical single family residential customers on a one acre lot, is proportionally different for customers with differing property characteristics.

Background

The southern coast of South Carolina has long been a desirable tourist destination and sought after place to live, in no small part due to the natural beauty surrounding the areas waterways. In recent years, Beaufort County has declared its intention to be a regional leader in environmental quality initiatives in order to promote this existing advantage. An important subset of environmental quality, especially in this region, is the effective management of stormwater runoff. Because the County is right on the coast, and is crossed by large water bodies otherwise, the imperative to manage stormwater runoff has immediate implications on water quality in the region, rather than somewhere downstream. Beaufort County and its underlying jurisdictions – the City of Beaufort, the Town of Port Royal, Town of Hilton Head Island, and Town of Bluffton – take this charge seriously, and have over time developed individual and cooperative programs to manage the public safety and water quality concerns related to stormwater runoff.

As these programs have matured over time, they have become more costly, and several jurisdictions now find themselves needing to evaluate their operating costs and investments in any needed capital improvement projects. The jurisdictions are interested in revising rates and exploring other financial tools to support program initiatives, especially capital spending, and have engaged Applied Technology & Management (ATM) and subcontractor Raftelis Financial Consultants (RFC) to conduct a rate structure analysis and rate studies similar to this study that was prepared for the County. This report summarizes the results of ATM's efforts on behalf of the Town of Port Royal within the context of the County-wide rate study.

Jurisdictional Cooperation

Although historically each jurisdiction has managed stormwater concerns indirectly through individual development standards and environmental ordinances, the group has been working together for many years to manage storm drainage and ensure an improved standard of living for residents of the County. This relationship has become more explicit over time, through the development of inter-governmental agreements and memoranda of understanding, and through a closer working relationship among staff of each local government.

The most outstanding example of cooperation relates to the administration of the five separate utilities. Since 2001, when the utilities went into effect, the County has provided administrative services, including billing, billing data maintenance, and customer service, in exchange for a small portion of the fee revenues for each underlying jurisdiction.

The County has historically been a significant service provider for drainage maintenance activities to each of the underlying jurisdictions, offering a menu of drainage infrastructure cleaning, maintenance, and repair activities at hourly rates. The patchwork nature of the jurisdictional boundaries lends itself to a cooperative approach to these activities whenever possible to maximize efficiencies in equipment and staff time.

Three of the five jurisdictions participating in the regional stormwater utility, not including the Town, have recently been permitted as a municipal separate storm sewer systems (MS4) and become regulated under National Pollutant Discharge Elimination System (NPDES) MS4 permits. These permits require strict management of activities that impact the quality of stormwater runoff, such as

construction and industrial activities, as well as significant goals of public education and outreach in order to bolster the general public's ability to and interest in managing stormwater runoff responsibly.

Under the new permits, the jurisdictions will be required to perform maintenance activities on existing stormwater drainage infrastructure (as is done now), monitor water quality at outfalls, inspect facilities and infrastructure, and provide education and outreach to citizens. The costs for these activities can be limited if they are performed in coordination between jurisdictions, either across the entire county or in more geographically distinct regions (such as North of the Broad River).

Utility background

Each of the five jurisdictions has a separate stormwater utility, established by separate ordinance, allowing the jurisdiction to collect revenues dedicated to stormwater management activities. As mentioned above, each jurisdiction cooperates in the administration of the utility by funding a portion of the County staff and material costs, effectively creating a regional utility.

At the inception of the regional utility in 2001, each property was charged a stormwater fee (conveyed on the annual tax bill) based on the size of the property and a runoff factor associated with that type of property. At this time, all five jurisdictions were charging the same rate, such that a similar property in any jurisdiction would pay the same annual fee. By 2005, the County had access to aerial photography that allowed for a more reliable approach to fee calculation. Rather than use tabular property characteristics to develop the fee for an individual property, the fee could be calculated based on one characteristic that was deemed an important cost driver: impervious surface area. Some elements of the previous rate structure remained intact, but for developed properties, the utility replaced their existing rate structure with one based on impervious surface area as measured from aerial photography.

At its core, this is an industry standard approach to calculating stormwater fees. However, the data available to the County in 2005 were already several years out of date and of relatively poor quality (see Figure 1 below). In recent years, the County has been able to obtain much higher quality imagery on an annual basis and has been updating its impervious area measurements, the foundational billing data, as properties change.

Figure 1. Comparison of 2002 and 2015 Aerial Photography

Current Stormwater Utility Structure

Rate Structure

As defined by the ordinances passed in 2005, the jurisdictions share a rate structure, though each is allowed to charge rates necessary to generate the revenue needed within each individual jurisdiction. The current rate structure has three distinct parts: residential properties, nonresidential properties, and vacant lands. Because the stormwater fee is conveyed on the tax bill and the data should be related, every property falls into one of these three categories depending on its classification in the tax system. Generally, the basis for the rate is the amount of runoff a property generates, whether that be the result of impervious area or some other driver.

At the time of the last rate base and rate structure analysis, the median impervious surface area on single family residential properties was 4,906 square feet. This became the base unit (single family unit or SFU) for measuring impervious area on other types of properties as well. For property types within the tax system that have **residential** classifications, each equates to a distinct SFU equivalency factor in three "tiers." Residential property with 2,521 square feet or less of impervious area is tier 1. Tier 3 is residential property with 7,266 square feet or more of impervious area, and all residential property between these two impervious measures is tier 2. The tier equivalent SFU factor is multiplied by the per SFU rate for encompassing jurisdiction results in the rate. This concept is called simplified residential rates and is recommended in the newly modeled rate structures described in this study. The residential property types and SFU equivalencies are as follows:

Property Type	Equivalent SFUs
Tier 1 Single Family Unit (≤2,521 square feet)	0.50
Tier 2 Single Family Unit (2,522 to 7,265 square feet)	1.00
Tier 3 Single Family Unit (≥7,266 square feet)	1.50
Mobile Home	0.36
Apartment	0.39
Townhouse	0.60
Condominium	0.27

Where a single property includes multiple residential units, the equivalent SFU is per unit, such that an apartment complex property with 100 units would be charged for 0.39 (SFUs per unit) times 100 (number of units) times the rate to calculate the final fee.

Nonresidential properties represent the simplest of area of the current rate structure. For every property not classified as residential or vacant in the tax system, the stormwater fee is calculated based on the amount of impervious surface area on that property. This amount, divided by the 4,906 square foot SFU and multiplied by the per SFU rate, results in the final fee. There is no rounding or other manipulation of data.

Finally, **vacant** lands are presumed to have no impervious area, and are therefore not charged on that basis. They do still have an impact on the stormwater system, however, and should be responsible for a portion of the costs. At present, the rate structure allows for 'runoff factors' to be applied to vacant lands, with different factors used depending on a matrix of classification including whether a property is classified as agriculture, forestry, disturbed, or undisturbed.

Business Processes

In addition to the documented rate structure, there exist a number of business processes that have been developed over time to facilitate utility administration. Most of these processes are in line with the current ordinance but some have evolved to address data collection and maintenance difficulties that emerged from the existing rate structure. These include:

- the treatment of golf courses and parks as vacant land when in fact they may have a good deal of impervious area
- treatment of multi-use parcels (such as house and forested area on the same lot) as separate parcels with summed fees
- granting stormwater best management practices credit by overriding a property's fee to 1 SFU

During the course of these studies, the ATM team worked to identify any divergent business processes and compute updated metrics for the affected properties.

Rates

With the same rate structure in place since 2005, each jurisdiction has experienced increased revenue requirements and subsequently higher rates over time. Table 1 is a summary of each jurisdiction's rate history per SFU over time.

Table 1. Stormwater Fee Rates over Time

	2005-2006	*2007*	*2008*	*2009*	*2010*	*2011*	*2012-2014*
Beaufort County	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
City of Beaufort	$ 44.43	$ 44.43	$ 44.43	$ 44.43	$ 65.00	$ 65.00	$ 105.00
Town of Port Royal	$ 44.43	$ 44.43	$ 50.00	$ 50.00	$ 50.00	$ 50.00	$ 50.00
Town of Bluffton	$ 49.00	$ 49.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00	$ 98.00
Town of Hilton Head Island	$ 44.43	$ 50.76	$ 50.76	$ 83.23	$ 108.70	$ 108.70	$ 108.70

Town of Port Royal Stormwater Program

The Town has historically had a fairly limited stormwater program with a high fund balance from year to year. In recent years, the fund balance has diminished as operations and maintenance needs increase. The Town has been investing more funds in maintenance of the Cypress Wetlands, a regional BMP, and the surrounding area as well as street sweeping, catch basin inspection, inventory, and cleaning, and drainage system mapping. In support of these initiatives, personnel and operational costs continue to grow at a steady pace, along with engineering and professional services.

The County has been financially responsible for maintenance and repair on county-wide infrastructure on and off County road rights of way, even within the municipal boundaries of the Town. More recently, the County has become unable to adequately provide stormwater services throughout the entirely of the unincorporated county with the available funds. That is, maintenance activities in parts of the county, especially those pockets within other jurisdictions, have been neglected in favor of addressing needs that could be met more economically. The City and Towns have not been receiving the stormwater management services they have come to expect from the County, those the County also endeavors to provide, because of funding shortfalls. This shortfall is to be addressed through the County-wide Infrastructure fee, described below, and the County expects to better be able to provide those services going forward.

There are a number of capital projects that have been identified by the Town for completion in the next several years, many of which relate to the existing Cypress Wetlands regional BMP and increasing its effectiveness at collecting and treating stormwater runoff.

Rate Study Approach

Due to the Town's growing stormwater program and the new requirements imposed by the MS4 permit, the Town has increasing costs over the coming years. The County, also faced with steeply increasing costs, initiated a rate study to achieve the most equitable cost recovery structure within the unincorporated County and the four municipalities. The rate study, detailed in this section, resulted in an optimal rate structure for all participating jurisdictions. For the sake of administrative simplicity and continuity, a single rate structure was recommended for all jurisdictions.

The ATM team was contracted to assist Beaufort County Stormwater (County) with a detailed stormwater utility rate study. For the unincorporated County and each of the four municipalities, the team conducted a full accounting of planned stormwater program costs over the next five years, which are expected to increase driven by the combination of existing operations and maintenance activities, a significant capital project backlog, and emerging NPDES compliance needs. The rate study was performed concurrent with the budgeting process for the fiscal year that began July 1, 2015, and resulted in the development and consideration of a number of rate structure options, described below.

Goals

The primary goal of the rate study was to model financially sufficient scenarios to support the jurisdictions' current and future stormwater programs. This included the following supporting objectives:

1. Determine the current and future (from MS4 compliance, jurisdictional growth, etc.) revenue requirements of each program;
2. Determine the most fair and reasonable way to recover revenues while balancing data maintenance efforts;
3. Facilitate future program visioning; and
4. Account for potential future collaboration and shared costs.

Through numerous meetings, extensive model development and refinement, and collaborative review of the results, the team and the project remained accountable to these goals throughout the process.

Modeling

The primary deliverable from the rate study is a model that was developed to compare and contrast different financial scenarios for each of the jurisdictions. The model balances revenue requirements with funding from the stormwater fee and other possible sources. On the revenue requirements side, for each jurisdiction the ATM team considered existing revenue requirements, future MS4 permit related expenses, and capital needs. Revenue was modeled as the resulting revenue from several different rate structures as well as supplemental resources from bond issuances or other sources. With that basic structure in place, the model was refined to allow for allocation of costs across jurisdictions and rate components (see below for more information) in order to optimize rate equity.

The finalized model has been made available to each jurisdiction for ongoing use as a financial planning tool.

Data update

Much of the impervious area data originally developed for the 2005 rate study was created using low-quality 2002 aerial imagery. With the possible shift in rates and rate structure, it was critical to have improved source data. As a part of the rate study, the ATM team conducted a targeted review update (where needed) of approximately 5,000 parcel polygons within the GIS and across all of the jurisdictions in order to update the rate base.

At the conclusion of the effort, RFC reviewed and updated the impervious features as necessary on a total of 5,937 parcel polygons, deriving the features using the newest available imagery from 2013.

Rate Components

Fixed Costs

Many costs associated with the administration of the utility have little to do with specific characteristics of the land. Rather, they represent a public service to which each property owner (account holder) has equal access. Billing and collections, data management and updating, programming, and customer support fall within this category. These costs, then, are distributed evenly to each account holder by being allocable to a fixed charge per parcel.

Variable Costs: Impervious Surfaces Area and Gross Parcel Area

Impervious area is the area of land covered by a hard surface through which rainwater cannot pass, such as building footprints and parking lots. The amount of impervious area on a parcel is most directly related to the quantity of stormwater to be handled by the system. For bare soil and vegetated ground cover, some water will infiltrate into the ground—even during heavy rain—rather than run across the surface. For impervious surfaces, on the other hand, water cannot infiltrate into the ground. For that reason, impervious surface causes the peak discharge volume of runoff from a parcel of land to be higher than it would otherwise. Regardless of how the land is managed, runoff tends to gather nutrients and other potential pollutants. Because virtually none of this runoff (and the pollutants it carries) soaks into the ground, runoff from impervious area carries a greater volume of harmful materials toward receiving waterbodies than pervious area.

One unique aspect of the stormwater utilities in these jurisdictions is the wide variety of land use represented within each jurisdiction. Gross area is included as a component of the stormwater fee to capture the costs not solely related to impervious area runoff. As opposed to impervious area, gross land area contributes proportionately more to the nutrients and pollutants that stormwater runoff may pick up and less to the sheer volume of runoff to be managed. As discussed, pervious land can absorb some of the water that falls on it, so it does not contribute as much to runoff. However, pervious land still contributes pesticides, fertilizers, leaves, and other undesirable materials to the runoff that does occur. As such, stormwater costs related to water quality and quantity (most O&M costs) are allocable in some portion to gross land area.

In the costs described below, allocability to impervious area and gross area represents a relationship between a particular cost and the demand for that cost caused by a higher volume of stormwater (including higher levels of pollution) to be managed. An impervious and gross area rate structure allocates some cost to each of the two variables, in this case either allocating 80% or 90% of the variable costs to impervious area, and the remaining costs to gross area. The gross area units would include a declining block, such that large properties have more units of gross area than small properties, but the increase in units of gross area as overall parcel size increase are blunted by the declining block.

Cost Allocability

The proposed rate structures take into account a number of costs that vary by:

- Who provides the service,
- Who receives the service, and
- What drives the cost of the service (the existence of an account, impervious area or gross area)

This section describes the different elements of the jurisdictions' and utility's program costs and how they may be accommodated in the rate structures. The resulting modeled rates for each jurisdiction take into account the distribution of costs across all jurisdictions based on the chosen allocation scheme, and the particular rate base of that jurisdiction.

Jurisdictional Infrastructure O&M

Each of the five jurisdictions maintains its own stormwater drainage infrastructure and funds those costs from utility revenue. These costs are driven by impervious area and gross area in the jurisdiction, which contribute to stormwater runoff and nutrient loading. As such, the impervious and/or gross area component of the fee will include these costs. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Jurisdiction Capital Projects

Each of the five jurisdictions has an independent capital plan, and can determine whether bond funding or pay as you go funding (or paying with available unencumbered funds) is appropriate or necessary. Capital financing has been "pay-as-you-go" for most jurisdictions. An alternative is for jurisdictions to borrow money to build capital projects and pay this back over time. This option is described in the definitions as debt.

The cost drivers for capital projects are similar to those for regular O&M, and are allocable to impervious and gross area within a jurisdiction. Debt service (in the case of bond funding) or cash contributions to capital projects are included in the impervious and/or gross area components of a fee. Revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Debt

For some of the jurisdictions, including for the Town, capital needs outpace the funds available through fee revenue. Issuing debt in the form of revenue bonds is a viable alternative to fund these projects, and in some cases may be the most appropriate option. Debt financing is appropriate for large physical assets with long expected lives, generally constructed improvements. Most notable, debt service creates a mechanism for future ratepayers to help fund the infrastructure from which they still benefit. The exceptional environmental quality found in this region is one of the primary reasons people choose to live and work here, and at its most basic, every investment made in capital projects supports that fundamental tenet. Through debt funding of capital projects, ratepayers of the future can pay back into the program that promotes this high quality of life.

Issuance of revenue bonds will not affect a jurisdiction's existing covenants or caps. With revenue bonds, the jurisdiction's stormwater utility will be solely responsible for servicing that debt through utility revenues, and there is no risk to the greater entity.

County-wide Infrastructure O&M

The County maintains some larger drainage infrastructure within each of the four municipalities in addition to drainage infrastructure within the unincorporated area. County-wide infrastructure (defined as pipes and open ditches both in and out of rights of way that are owned or maintained by the County) maintenance costs have not been allocated to any ratepayers outside the unincorporated County prior to FY 15-16. That is, revenue from fees charged to property owners in the unincorporated County have been funding infrastructure maintenance, repair, and replacement activities throughout all five

jurisdictions. Currently, these activities have been limited in the incorporated areas because funding levels, supported by the unincorporated ratepayers only, are insufficient. The modified rate structure will share the County's costs for County-wide infrastructure maintenance across all the unincorporated and incorporated areas of the County based on linear feet of pipes and open ditches in each jurisdiction.

The cost drivers for operation and maintenance of county infrastructure are very similar to those for the various jurisdictional stormwater infrastructure systems. These costs may be recovered through an impervious and/or gross area fee component, the revenue from which supports County efforts. Revenue from this fee component would be returned to the service provider, the County.

The County's total budgeted County-wide infrastructure operation and maintenance cost is approximately $3.5 million in FY 2015-2016. A detailed analysis of the proportions of this County-wide infrastructure was prepared in 2015 by the County, and was used as the basis for the cost allocations to unincorporated areas of the County and to the municipalities. This inventory was conducted in GIS data layers and was made available to all jurisdictions by the County as part of this study. The analysis shows the proportions to be:

Unincorporated County	83.6%
City of Beaufort	2.2%
Town of Port Royal	0.8%
Town of Bluffton	7.6%
Town of Hilton Head Island	5.8%

Based on this proportional breakdown, the County began to convey a separate charge (as a new line on the bill, not to be added to or combined with the City/Towns fees), that bills this amount per SFU or IA/GA unit, as the rate structure would require. Final fee amounts are discussed in the Modified Rate Structure section, below.

Utility Administration

The County administers the cooperative utility for each of the five jurisdictions. Currently administrative fees are allocated across the impervious area rate base such that properties with a large number of SFUs of impervious area pay more in administrative fees than those with fewer SFUs.

Costs for this effort may be allocable to either the number of parcels or accounts for which data must be maintained, customer service must be provided, etc. These costs may instead be recovered via a fixed charge component charged to all utility customers. Alternatively, costs could be allocable to the impervious and/or gross area fee component if they are more closely related to the effort of maintaining the geospatial data or researching and addressing detailed questions from large, complex customers. Revenue from this fee component would be returned to the service provider, the County.

MS4 Compliance

The Town expects to soon be permitted as an municipal separate storm system (MS4) under the National Pollutant Discharge Elimination System (NPDES) program and subject to MS4 permit requirements. Even though it is not permitted yet, the Town participates with the County in programs that comprise MS4 elements, such as water quality monitoring and education. For those jurisdictions subject to permit requirements, some program elements are fulfilled by each individual jurisdiction

while others are provided cooperatively. Any existing inter-governmental agreements and Memoranda of Understanding (MOU) may need to be revised if an alternate structure is chosen.

Cooperative Efforts

Monitoring

The County currently provides monitoring services within the boundaries of some municipalities, including the Town. This relationship could be expanded to other jurisdictions if desired. These costs would be driven by the number of accounts and would be included in the fixed charge component of the fee, only in the jurisdictions where the County provides this monitoring service. Revenue from this fee component would be returned to the service provider, the County.

Public Education/Outreach

Currently, the jurisdictions participate in a cooperative public education and outreach scheme. Rather than implement separate agreements between each jurisdiction, this cost can be considered a per account cost and included in the fixed charge component of the fee, applicable to everyone in the County. Revenue from this fee component would be returned to the service provider, the County.

Individual Efforts

Other MS4 permit compliance activities may be done separately by each jurisdiction, and provided only to that jurisdiction. These costs are allocable to the impervious and/or gross area fee component and revenue from this fee component would be returned to the service provider, the individual jurisdiction.

Modeled Options

Elements of Six Rate Structure Options

Simplified residential rate: Charge one of a series of flat rates, based on SFUs, to different classes of residential properties. This is how residential rates work in the current rate structure.

Continued application of the agricultural use policy: Properties legally under certain agricultural uses have limits placed on their stormwater fees by state law. The rate structure options will continue to follow this approach.

Updated source data: RFC reviewed and updated as necessary 5,937 parcel polygons throughout the five jurisdictions with the newest available imagery from 2013. The results of this update were used to model both the modified rate structure options and the current rate structure options, which make use of the newly measured impervious features.

Minimum charge: A minimum charge is a rate structure feature whereby once the amount a property owes in annual stormwater fees is computed it is compared to the minimum charge and if less, the minimum charge is applied to the property. The minimum charge is set to reflect the minimum amount of demand a property can actually place on the jurisdiction providing service. The minimum charge is represented as a fixed fee component and is charged to every property.

Options

A. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; pay-as-you-go capital financing

B. Current rate structure with updated source data; current approach for administrative fees based on impervious area units; compliance with current rate ordinance; debt financing for some capital projects

C. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per-account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

D. Modified rate structure based on impervious and gross area; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; pay-as-you-go capital financing

E. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to per account basis; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

F. Modified rate structure based on impervious and gross area at 80/20 or 90/10 allocation; continued use of simplified residential rates; continued application of agricultural use policy; County-wide administrative costs allocated to impervious and gross area; County-wide infrastructure maintenance costs allocated to impervious and gross area based on infrastructure miles per jurisdiction or other intra-jurisdictional allocation model; debt for some capital financing

Table 2. Modeled Rate Structure Options

	Overall Rate Structure	*Debt Financing for Some Capital?*	*Method for Allocating Admin & Reg Costs*	*Method for Allocating CWI O&M Costs*	*Simplified Residential Rates*	*Alternative Cost Sharing Approach*
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

Modified Rate Structure

ATM modeled four of the six options based on a modified rate structure design that relies more heavily on measured impervious area data but retains the basic backbone of the existing rate structure.

Fee Structure

The recommended fee includes three components: a fixed component to convey costs allocable by account, and two variable components: one based on gross area and one based on impervious area, to convey the costs that vary by property characteristic. With the exception of those explicitly exempt, every real property (which in some cases does not include land on the ground) has a stormwater fee calculated for it.

Bill Class

Every property falls into one of several bill classes, which determine fee calculation for that property. Residential properties are treated in a similar manner as they are currently, with SFU equivalents to represent the impervious area on each type of residential property. Gross area and fixed fee components are added to this portion of the residential fee. Vacant property is not charged for any impervious area, measured or assumed. It is, however, charged for the gross land area of the parcel and the fixed component of the fee, as described below. Exempt parcels are not charged any portion of the fee. Finally, all other properties are considered non-residential, non-vacant properties (herein called "commercial"), which are charged a per unit rate for impervious area, along with a fixed fee and gross area charge.

Rate Structure Design

Impervious Area Units

The existing impervious area unit of 4,906 has been retained for maximum equity between residential and commercial bill classes in impervious area charge. Residential properties are charged for impervious area based on the factors existing in the current rates structure. Commercial properties are charged per 4,906 square feet unit, or part thereof, of impervious area. Under the modified rate structure design, 80% of variable costs are funded through impervious area charges.

Gross Area Blocks

A gross area fee component is included for all properties that have a real parcel and parcel area found in GIS. The gross area charge is calculated in equivalent units as follows:

- Every property is charged $X for the first 2 acres of gross area. This means that every property getting a gross area fee is charged at least $X.
- For every acre above 2 acres, and up to 10 acres, the property is charged .5*$X per acre.
- For every acre above 10 acres, and up to 100 acres, the property is charged .4*$X per acre.
- For every acre above 100 acres, the property is charged .3*$X per acre.

This declining block structure maintains the important rate base of large properties. Under the modified rate structure design, 20% of variable costs are funded through gross area charges.

Exempt Properties and Special Cases

The modified rate structure design mirrors the current rate structure in exempt properties. Roads, railroads, private roads, and boat slip properties are exempt from stormwater fees. As described above, vacant (undeveloped) parcels are not exempt from the entire fee, but are not charged for the impervious area fee component.

Credit

For properties receiving credit for BMPs, that credit can be carried forward in this modified rate structure, by utilizing a new set of credits policies and a manual developed by the County and made available to the Town.

Rate Study Results

ATM developed a spreadsheet-based rate model tool to model the way the individual jurisdiction and County-wide costs impact rates. The comprehensive model can be manipulated to calculate rates for each of the six options described above, as well as allow for manual override of the calculated rates to predict the revenue generation and sufficiency of a particular rate structure and rate choice.

ATM and Utility staff recommend rate structure Option E for the unincorporated County and therefore also recommend Options E or C for each underlying jurisdiction. Both Options C and E result in rates for a fixed charge, an impervious area charge, and a gross area charge. Option E includes the flexibility to issue debt and fund payments through the variable components of the charge. For the Town, ATM recommends Option E, which allows for but does not require debt issuances; potentially empowering the Town to more smoothly and equitably fund large capital projects. The recommended rates are as follows:

	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
Fixed Cost per Account	**$5.57**	**$5.57**	**$5.00**	**$5.00**
Cost per IA Unit	**$35.00**	**$35.00**	**$40.00**	**$45.00**
Cost per GA Unit	**$9.43**	**$9.43**	**$15.00**	**$20.00**

Under Option E, administrative and regulatory compliance charges are allocated on a per account basis, infrastructure O&M costs are allocated based on the impervious and gross area, and no debt is issued within the planning period.

The Town is responsible for funding 0.8% of all county-wide infrastructure (CWI) operation and maintenance, with the allocation based on the amount of infrastructure to be maintained by the County that falls within each jurisdictional boundary, as described previously. Under the proposed rate structure, this is a $4.36 annual charge for an average house on a lot smaller than 2 acres. For the upcoming fiscal years, the CWI funding within each jurisdiction's boundaries on an SFU or IA/GA basis (depending on the rate structures chosen) are:

Table 3. County-wide Infrastructure Cost Breakdown by Jurisdiction

8/18/2015 CWI changes due to revised GIS dataset

	FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020
CWI Cost Share on SFU Basis					
Unincorporated County	$ 45.30	$ 46.97	$ 47.50	$ 49.01	$ 49.71
City of Beaufort	$ 5.15	$ 5.74	$ 5.70	$ 5.78	$ 5.76
Town of Port Royal	$ 3.88	$ 4.33	$ 4.30	$ 4.36	$ 4.35
Town of Bluffton	$ 18.13	$ 20.22	$ 20.09	$ 20.38	$ 20.31
Town of Hilton Head Island	$ 5.52	$ 6.15	$ 6.11	$ 6.20	$ 6.18
CWI Cost Share on IA/GA Unit Basis					
Unincorporated County					
per IA Unit	$ 40.60	$ 42.09	$ 42.57	$ 43.93	$ 44.55
per GA Unit	$ 5.28	$ 5.50	$ 5.59	$ 5.80	$ 5.91
City of Beaufort					
per IA Unit	$ 4.10	$ 4.58	$ 4.55	$ 4.61	$ 4.60
per GA Unit	$ 1.34	$ 1.49	$ 1.48	$ 1.51	$ 1.50
Town of Port Royal					
per IA Unit	$ 3.13	$ 3.49	$ 3.47	$ 3.52	$ 3.51
per GA Unit	$ 0.78	$ 0.87	$ 0.87	$ 0.88	$ 0.88
Town of Bluffton					
per IA Unit	$ 17.83	$ 19.89	$ 19.76	$ 20.04	$ 19.97
per GA Unit	$ 2.25	$ 2.51	$ 2.49	$ 2.52	$ 2.52
Town of Hilton Head Island					
per IA Unit	$ 4.39	$ 4.89	$ 4.86	$ 4.93	$ 4.91
per GA Unit	$ 1.43	$ 1.60	$ 1.59	$ 1.61	$ 1.60

In the first planning year, FY 2015-2016, several shared costs (those for the regional stormwater master plan, public education and outreach, and water quality monitoring) are funded via inter-governmental agreements with the responsible parties. In this year only, these are represented as separate revenues and the costs are not allocated to the jurisdictions based on SFU or IA/GA unit calculation.

General Impacts of Rate Structure Changes

The recommended rate structure incorporates a fixed charge per account (parcel), plus two variable charges: one for impervious area on the parcel and one for gross parcel area. It also continues the practice of using simplified residential rates for residential properties of varying types from single family detached through condominium units. Because the current billing practices for large undeveloped tracts include an impervious area estimation process while the new rates structures do not charge an impervious area fee if there is no impervious area present, the impervious charges may be divergent between the rate structures. However, the introduction of a gross area charge in the new rate structure modeled largely mimics the fee outcomes.

Using three rate metrics (fixed, impervious area, gross area) allows the fee to have components that relate to cost causation most directly, which is generally preferred in utility ratemaking. For example, some administrative costs for billing and collections efforts relate much more to the existence of a bill than to the size of the bill. Paying these costs from an impervious area rate shifts costs to large ratepayers while paying these costs from a fixed charge, as recommended, allocates the costs more equally across all ratepayers.

Needed Ordinance Revisions

If a new rate structure is adopted, significant revisions to the Town's stormwater utility fee ordinance will be needed. While the revisions are outside the ATM team's scope of work, the team has identified the following categories to focus on:

1. The definitions for residential dwelling classifications and nonresidential properties will need to be revised according to the new rate structure.
2. The rate structure and fee calculation description will need to be updated (refer to Rate Structure Design section above).
3. Any references to findings from the 2005 rate study should be eliminated or updated to reflect the current findings.
4. If applicable, references to the stormwater utility's responsibilities and management will need to be revised to take into account the multijurisdictional nature of the utility and any changes to the way funding occurs. The revisions can be based on current inter-governmental governmental agreements with the County.

Ongoing Billing Data Maintenance

Data maintenance processes for stormwater utility fee billing are crucial to enabling accurate and timely reporting and customer service. Property data from the Town of Port Royal, including information on development, should be integrated and kept as current as possible for use in determining properties that are billable for the stormwater fee. A GIS layer representing impervious surfaces should be updated regularly as part of utility administration in response to development, demolition, and recognition of incorrect data. In addition to tax parcel data, other County data sources such as building permit applications and changes in improvement values can also be utilized as triggers to begin or update stormwater billing. Under rate structure E the County is able to provide this data maintenance seamlessly and most economically to the Town.

BEAUFORT COUNTY STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2805 Facsimile (843) 255-9478

INTEROFFICE MEMORANDUM

TO: **Brian Flewelling, Chairman, Natural Resources Committee**

FROM: **Eric W. Larson, Stormwater Manager**

SUBJECT: **Stormwater Ordinance Revision – Stormwater Rate structure for Submerged parcels, Marshes/Wetlands, and Condominiums**

DATE: **August 15, 2016**

Since the implementation of the new rate structure approved in 2015, the Utility staff has been dealing with three types of problems with collections of SWU fees.

a) Submerged properties – These accounts do not get a tax bill due to their nature of being lost to erosion. However, the new billing structure created a need to bill for administrative fees and gross area charges. Recognizing this issue, a revision of the Credit manual effectively waived the gross acre charge, leaving only the administrative fee of $12 per account. Some owners were still upset with the new fee. We have been manually making adjustments to remove the administrative fee as owners contact us. One of the issues is that the owners are unaware they even still own the property, thinking it is lost to the sea and owned by the government. Therefore, the County is creating a Trust that can accept ownership of these lots via Quit Claim. Fees will be credited based on the new Credit Manual or waived by the County once the property is transferred. The revision of the ordinance will remove the administrative fee even if the owner chooses not to transfer the property to the County.
b) Marshland/Wetland – The revision to the Credit Manual solved the issue of billing gross area to these permanently undevelopable parcels, or portion therefore. However, administrative fees still remain an issue. The revision of the ordinance will remove the administrative fee if the account is 100% undevelopable due to salt water marshland or fresh water wetlands.
c) Condominiums - Condos are located on “master account” lots. These lots are shared by the owners. Taxes on the master account are zero with all the value on the condo unit. However, the new rate structure began charging the master account an Admin. fee and gross area charge. We have found that many master accounts were never properly transferred to a POA or entity that can receive the bill and pay the fees. As a result, the fee is not collectable. The revision of the ordinance will create a nominal GA fee per condo, created by an analysis of the average parcel size and condo unit count ratio. The revenue generated by the proposed method is similar to that calculated under the new rate structure, but will be charged to a viable parcel owner.

As a result of these issues, we are proposing a minor change to the Stormwater Ordinance to handle billing of condos and master accounts and to exempt fees on marsh, wetland, and submerged properties under the conditions summarized above.

ORD. 2016 / ____, ___-___- 2016

AN ORDINANCE TO AMEND THE STORMWATER MANAGEMENT UTILITY ORDINANCE AS ADOPTED ~~AUGUST 22, 2005~~ SEPTEMBER 28, 2015 TO PROVIDE FOR AMENDMENT OF THE RATE STRUCTURE ACCPLIABLE TO PARCELS RELATED TO CONDOMINIUMS, SUBMERGED PROPERTIES, AND PARCELS CONTINGUOUS TO SALT WATER MARSH., ~~ADJUST UTILITY RATES, AND TO MODIFY CERTAIN TERMS TO ACCURATELY REFLECT ADMINISTRATION STRUCTURE~~

WHEREAS, Act 283 of 1975, The Home Rule Act, vested Beaufort County Council with the independent authority to control all acts and powers of local governmental authority that are not expressly prohibited by South Carolina law; and

WHEREAS, Chapter 99, Article II,"Stormwater Management Utility" was adopted on August 27, 2001 and was modified by ordinance on August 22, 2005 and September 28, 2016; and

WHEREAS, Stormwater Management Utility was established for the purpose of managing, acquiring, constructing, protecting, operating, maintaining, enhancing, controlling, and regulating the use of stormwater drainage systems in the county;

WHEREAS, to meet the increasing demands on the Stormwater Management Utility in the areas of federally mandated municipal Separate Stormsewer Systems (MS4) permitting, capital project needs, and cost of service of operations and maintenance, as well as an evolving understanding of the impacts of the urban environment on water quality, the Stormwater Management Utility finds it necessary to amend the structure in which rates are determined and adjust the rates charged to the citizens of Beaufort County to meet said demands in a fair and equitable manner; and

WHEREAS, the administrative structure of the Stormwater Management Utility needs to be amended to reflect the organization of the current administration; and

WHEREAS, further amendments are needed to make adjustments to the rate structure to address the differences in taxation and billing for condominiums and parcels affected by standing water or tidal impacts; and

Formatted: Indent: First line: 0"

WHEREAS, Beaufort County Council believes to best provide for the health, safety, and welfare of its citizens it is appropriate to amend Chapter 99, Article II of the Beaufort County Code and to provide for additional terms to said Article; and

Formatted: Indent: First line: 0.5"

WHEREAS, text that is underscored shall be added text and text ~~lined through~~ shall be deleted text; and

NOW, THEREFORE, BE IT ORDAINED BY BEAUFORT COUNTY COUNCIL, that Chapter 99, Article II of the Beaufort County Code is hereby amended and replaced with the following:

Chapter 99 - STORMWATER MANAGEMENT UTILITY

ARTICLE I. - IN GENERAL

DRAFT

Secs. 99-1—99-100. - Reserved.

ARTICLE II. - STORMWATER MANAGEMENT UTILITY

Sec. 99-101. - Findings of fact.

The County Council of Beaufort County, South Carolina, makes the following findings of fact:

(a) The professional engineering and financial analyses conducted on behalf of and submitted to the county properly assesses and defines the stormwater management problems, needs, goals, program priorities, costs of service, need for interlocal cooperation, and funding opportunities of the county.

(b) Given the problems, needs, goals, program priorities, costs of service, needs for interlocal cooperation, and funding opportunities identified in the professional engineering and financial analyses submitted to the county, it is appropriate to authorize the establishment of a separate enterprise accounting unit which shall be dedicated specifically to the management, construction, maintenance, protection, control, regulation, use, and enhancement of stormwater systems and programs in Beaufort County in concert with other water resource management programs.

(c) Stormwater management is applicable and needed throughout the unincorporated portions of Beaufort County, but interlocal cooperation between the county and the incorporated cities and towns within the county is also essential to the efficient provision of stormwater programs, services, systems, and facilities. Intense urban development in some portions of the county has radically altered the natural hydrology of the area and the hydraulics of stormwater systems, with many natural elements having been replaced or augmented by man-made facilities. Other areas of the county remain very rural in character, with natural stormwater systems predominating except along roads where ditches and culverts have been installed. As a result, the specific program, service, system, and facility demands differ from area to area in the county. While the county manages, operates, and improves stormwater programs, services, systems and facilities in the rural as well as urban areas, the need for improved stormwater management is greatest in the urban areas and nearby, including areas within incorporated cities and towns. Therefore, a stormwater utility service area subject to stormwater service fees should encompass, in so far as possible through interlocal agreements, the entirety of Beaufort County and the stormwater management utility service fee rate structure should reflect the amount of impervious area on individual properties and the runoff impact from water quantity and water quality.

(d) The stormwater needs in Beaufort County include but are not limited to protecting the public health, safety, and welfare. Provision of stormwater management programs, services, systems, and facilities therefore renders and/or results in both service and benefit to individual properties, property owners, citizens, and residents of the county and to properties, property owners, citizens, and residents of the county concurrently in a variety of ways as identified in the professional engineering and financial analyses.

(e) The service and benefit rendered or resulting from the provision of stormwater management programs, services, systems, and facilities may differ over time depending on many factors and considerations, including but not limited to location, demands and impacts imposed on the stormwater programs, systems, and facilities, and risk exposure. It is not practical to allocate the cost of the county's stormwater management programs, services, systems, and facilities in direct and precise relationship to the services or benefits rendered to or received by individual properties or persons over a brief span of time, but it is both practical and equitable to allocate the cost of stormwater management among properties and persons in proportion to the long-term demands they impose on the county's stormwater programs, services, systems, and facilities which render or result in services and benefits.

(f) Beaufort County presently owns and operates stormwater management systems and facilities that have been developed, installed, and acquired through various mechanisms over many years. The future usefulness and value of the existing stormwater systems and facilities owned and operated by Beaufort County, and of future additions and improvements thereto, rests on the ability of the county to effectively manage, construct, protect, operate, maintain, control, regulate, use, and enhance the stormwater systems and facilities in the county, in concert with the management of other water resources in the county and in cooperation with the incorporated cities and towns. In order to do so, the county must have adequate and stable funding for its stormwater management program operating and capital investment needs.

(g) The county council finds, concludes, and determines that a stormwater management utility provides the most practical and appropriate means of properly delivering stormwater management services and benefits throughout the county, and the most equitable means to fund stormwater services in the county through stormwater service fees and other mechanisms as described in the professional engineering and financial analyses prepared for the county.

(h) The county council finds, concludes, and determines that a schedule of stormwater utility service fees be levied upon and collected from the owners of all lots, parcels of real estate, and buildings that discharge stormwater or subsurface waters, directly or indirectly, to the county stormwater management system and that the proceeds of such charges so derived be used for the stormwater management system.

(i) The county council finds that adjustments and credits against stormwater utility service fees are an appropriate means to grant properties providing stormwater management program services that would otherwise be provided by the county and will afford Beaufort County cost savings. These reductions will be developed by the Stormwater Manager and will be reviewed on an annual basis to allow for any modifications to practices required by Beaufort County.

The county council finds that both the total gross area and impervious area on each property are the most important factors influencing the cost of stormwater management in Beaufort County and, the runoff impact from water quantity and water quality.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-102. - Establishment of a stormwater management utility and a utility enterprise fund.

There is hereby established within the Environmental Engineering Division of Beaufort County a stormwater management utility for the purpose of conducting the county's stormwater management program. The county administrator shall establish and maintain a stormwater management utility enterprise fund in the county budget and accounting system, which shall be and remain separate from other funds. All revenues of the utility shall be placed into the stormwater management utility enterprise fund and all expenses of the utility shall be paid from the fund, except that other revenues, receipts, and resources not accounted for in the stormwater management utility enterprise fund may be applied to stormwater management programs, services, systems, and facilities as deemed appropriate by the Beaufort County Council. The county administrator may designate within the stormwater management utility enterprise fund such sub-units as necessary for the purpose of accounting for the geographical generation of revenues and allocation of expenditures pursuant to interlocal governmental agreements with the cities and towns of Beaufort County.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-103. - Purpose and responsibility of the utility.

The Beaufort County Stormwater Management Utility is established for the purpose of managing, acquiring, constructing, protecting, operating, maintaining, enhancing, controlling, and regulating the use of stormwater drainage systems in the county. The utility shall, on behalf of the county and the citizens of the county: administer the stormwater management program; perform studies and analyses as required; collect service fees; system development fees, in-lieu of construction fees and other funding as allowed

by law, and obtain and administer grants and loans as authorized by the county council; prepare capital improvement plans and designs; perform routine maintenance and remedial repair of the stormwater systems; acquire, construct, and improve stormwater systems; acquire necessary lands, easements, rights-of-way, rights-of-entry and use, and other means of access to properties to perform its duties; regulate the on-site control, conveyance, and discharge of stormwater from properties; obtain federal and state permits required to carry out its purpose; enter into operating agreements with other agencies; allocate funds pursuant to interlocal governmental agreements; educate and inform the public about stormwater management; and perform, without limitation except by law, any stormwater management functions and activities necessary to ensure the public safety, protect private and public properties and habitat, and enhance the natural environment and waters of the county.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-104. - Limitation of scope of responsibility.

The purpose and responsibility of the stormwater management utility shall be limited by the following legal and practical considerations.

(a) Beaufort County owns or has legal access for purposes of operation, maintenance, and improvement only to those stormwater systems and facilities which:

  (1) Are located within public streets, other rights-of-way, and easements;

  (2) Are subject to easements, rights-of-entry, rights-of-access, rights-of-use, or other permanent provisions for adequate access for operation, maintenance, monitoring, and/or improvement of systems and facilities; or

  (3) Are located on public lands to which the county has adequate access for operation, maintenance, and/or improvement of systems and facilities.

(b) Operation, maintenance, and/or improvement of stormwater systems and facilities which are located on private property or public property not owned by Beaufort County and for which there has been no public dedication of such systems and facilities for operation, maintenance, monitoring, and/or improvement of the systems and facilities shall be and remain the legal responsibility of the property owner, except as that responsibility may be otherwise affected by the laws of the State of South Carolina and the United States of America.

(c) It is the express intent of this article to protect the public health, safety, and welfare of all properties and persons in general, but not to create any special duty or relationship with any individual person or to any specific property within or outside the boundaries of the county. Beaufort County expressly reserves the right to assert all available immunities and defenses in any action seeking to impose monetary damages upon the county, its officers, employees and agents arising out of any alleged failure or breach of duty or relationship as may now exist or hereafter be created.

(d) To the extent any permit, plan approval, inspection or similar act is required by the county as a condition precedent to any activity or change upon property not owned by the county, pursuant to this or any other regulatory ordinance, regulation, or rule of the county or under federal or state law, the issuance of such permit, plan approval, or inspection shall not be deemed to constitute a warranty, express or implied, nor shall it afford the basis for any action, including any action based on failure to permit or negligent issuance of a permit, seeking the imposition of money damages against the county, its officers, employees, or agents.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-105. - Boundaries and jurisdiction.

The boundaries and jurisdiction of the stormwater management utility shall encompass all those portions of unincorporated Beaufort County, as they may exist from time to time and such additional

DRAFT

areas lying inside the corporate limits of those cities and towns in Beaufort County as shall be subject to interlocal agreements for stormwater management as approved by county council and participating municipal councils.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-106. - Definitions.

Unless the context specifically indicates otherwise, the meaning of words and terms used in this article shall be as set forth in S.C. Code § 48-14-20, and 26 S.C. Code Regulation 72-301, mutatis mutandis.

Abatement. Any action deemed necessary by the county or its officers or agents to remedy, correct, control, or eliminate a condition within, associated with, or impacting a stormwater drainage system or the water quality of receiving waters shall be deemed an abatement action.

Adjustments. Adjustments shall mean a change in the amount of a stormwater service fee predicated upon the determination reached by the Stormwater Manager and referenced to the Adjustments and Credit Manual.

Bill Class. Every property falls into one of several bill classes. The bill class determines the fee calculation of that property.

Condominiums. Properties with individual ownership of a particular dwelling unit in a building and the common right to share, with other co-owners, in the general and limited common elements of the real property.

Countywide Infrastructure Operation and Maintenance and Capital Projects. The County maintains some typically larger infrastructure within each of the four municipalities in addition to within the unincorporated area. The rate structure will allocate the costs for the County to maintain just the countywide drainage infrastructure across the entire rate base in all jurisdictions based on infrastructure linear feet per jurisdiction.

Customers of the stormwater management utility. Customers of the stormwater management utility shall be broadly defined to include all persons, properties, and entities served by and/or benefiting, directly and indirectly, from the utility's acquisition, management, construction, improvement, operation, maintenance, extension, and enhancement of the stormwater management programs, services, systems, and facilities in the county, and by its control and regulation of public and private stormwater systems, facilities, and activities related thereto.

Developed land. Developed land shall mean property altered from its natural state by construction or installation of improvements such as buildings, structures, or other impervious surfaces, or by other alteration of the property that results in a meaningful change in the hydrology of the property during and following rainfall events.

Exemption. Exemption shall mean not applying to or removing the application of the stormwater management utility service fee from a property. No permanent exemption shall be granted based on taxable or non-taxable status or economic status of the property owner.

Fixed costs. Costs associated with the public service provided equally to each property owner. These costs include, but are not limited to the following: billing and collections, data management and updating, programming, and customer support.

Gross Area. Gross area is the acreage of a parcel as identified by the Beaufort County Assessor records.

Hydrologic response. The hydrologic response of a property is the manner whereby stormwater collects, remains, infiltrates, and is conveyed from a property. It is dependent on several factors including but not limited to the size and overall intensity of development of each property, its impervious area, shape, topographic, vegetative, and geologic conditions, antecedent moisture conditions, and

DRAFT

groundwater conditions and the nature of precipitation events. Extremely large undeveloped properties naturally attenuate but do not eliminate entirely the discharge of stormwater during and following rainfall events.

Jurisdictional Infrastructure Operations, Maintenance and Capital Projects. Each of the five jurisdictions maintains its own stormwater drainage infrastructure and funds those costs from utility revenue. Revenue from this fee component will be returned to the service provider, the individual jurisdiction.

Impervious surfaces. Impervious surfaces shall be a consideration in the determination of the development intensity factor. Impervious surfaces are those areas that prevent or impede the infiltration of stormwater into the soil as it entered in natural conditions prior to development. Common impervious surfaces include, but are not limited to, rooftops, sidewalks, walkways, patio areas, driveways, parking lots, storage areas, compacted gravel and soil surfaces, awnings and other fabric or plastic coverings, and other surfaces that prevent or impede the natural infiltration of stormwater runoff that existed prior to development.

Minimum Charge. A charge that reflects the minimum amount of demand a property will place on the service provider.

MS4 Permit. Each jurisdiction within Beaufort County will be subject to the federally mandated MS4 permit requirements. Compliance requirements include, but are not limited to monitoring, plan review, inspections, outreach and public education,

Nonresidential properties. Properties developed for uses other than permanent residential dwelling units and designated by the assigned land use code in the Beaufort County tax data system.

Other developed lands. Other developed lands shall mean, but not be limited to, mobile home parks, commercial and office buildings, public buildings and structures, industrial and manufacturing buildings, storage buildings and storage areas covered with impervious surfaces, parking lots, parks, recreation properties, public and private schools and universities, research facilities and stations, hospitals and convalescent centers, airports, agricultural uses covered by impervious surfaces, water and wastewater treatment plants, and lands in other uses which alter the hydrology of the property from that which would exist in a natural state. Properties that are used for other than single family residential use shall be deemed other developed lands for the purpose of calculating stormwater service fees.

Residential dwelling classifications. The following categories will identify the appropriate dwelling unit classifications to be utilized in applying the stormwater utility fee structure to the designations contained in the Beaufort County tax data system:

Single-family

Apartments

Townhouses

Condominiums

Mobile Home

Salt Water Marsh. Those parcels, typically contiguous to water, identified as inundated daily due to tidal action and unbuildable. These properties are 100% below mean high tide and/or beyond established critical line as defined by the South Carolina Department of Health and Environmental Control's Office of Coastal Resource Management. (DHEC-OCRM). The County Tax Assessor's Office shall make this determination based on best available data.

Stormwater management programs, services, systems and facilities. Stormwater management programs, services, systems and facilities are those administrative, engineering, operational, regulatory, and capital improvement activities and functions performed in the course of managing the stormwater systems of the county, plus all other activities and functions necessary to support the provision of such

DRAFT

programs and services. Stormwater management systems and facilities are those natural and man-made channels, swales, ditches, swamps, rivers, streams, creeks, branches, reservoirs, ponds, drainage ways, inlets, catch basins, pipes, head walls, storm sewers, lakes, and other physical works, properties, and improvements which transfer, control, convey or otherwise influence the movement of stormwater runoff and its discharge to and impact upon receiving waters.

Stormwater service fees. Stormwater service fees shall mean the service fee imposed pursuant to this article for the purpose of funding costs related to stormwater programs, services, systems, and facilities. These fees will be calculated based upon the impervious and gross area at an 80/20 allocation; storm water service fee categories; any State agricultural exemptions or caps; an account administrative fee, countywide jurisdiction operation maintenance and capital project fees; and jurisdictional operation, maintenance and capital project fee.

Single-family unit (SFU). The single-family unit shall be defined as the impervious area measurements obtained from a statistically representative sample of all detached single-family structures within Beaufort County. The representative value will be 4,906 square feet.

Stormwater service fee categories. The appropriate categories for determining SFUs will be as follows:

	SFU Calculation (SFUs equal)
Tier 1 Single-family Unit (≤2,521 square feet)	Dwelling units x 0.5
Tier 2 Single-family Unit (2,522 to 7,265 square feet)	Dwelling units x 1
Tier 3 Single-family Unit (≥7,266 square feet)	Dwelling units x 1.5
Mobile Home	Dwelling units x 0.36
Apartments	Dwelling units x 0.39
Townhouses	Dwelling units x 0.60
Condominiums	Dwelling units x 0.27
Commercial	Impervious area x 4,906 sq. ft.*

*Commercial billed at a rate of 1 SFU per 4,906 square feet or a portion thereof

Submerged property. Those parcels, typically contiguous to water, identified as eroded due to tidal action and unbuildable. These properties are 100% below mean low tide and/or beyond established critical line as defined by the South Carolina Department of Health and Environmental Control's Office of Coastal Resource Management. (DHEC-OCRM). The County Tax Assessor's Office shall make this determination based on best available data.

Townhomes. See Condominiums.

Formatted: Indent: Left: 0", First line: 0.31"

DRAFT

Variable Costs. An impervious and gross area rate structure that allocates some cost to each of the two variables based on the amount of impervious surface and gross area.

(Ord. No. 2015/24, 9-28-2015; Ord. No. 2016/___, __-___-2016)

Sec. 99-107. - Requirements for on-site stormwater systems: enforcement, methods and inspections.

(a) All property owners and developers of real property to be developed within the unincorporated portions of Beaufort County shall provide, manage, maintain, and operate on-site stormwater systems and facilities sufficient to collect, convey, detain, control, and discharge stormwater in a safe manner consistent with all county development regulations and the laws of the State of South Carolina and the United States of America, except in cases when the property is located within an incorporated city or town subject to an interlocal governmental agreement with the county for stormwater management and the city or town has regulations that are more stringent than the county, in which case the city's or town's development regulations shall apply. Any failure to meet this obligation shall constitute a nuisance and be subject to an abatement action filed by the county in a court of competent jurisdiction. In the event a public nuisance is found by the court to exist, which the owner fails to properly abate within such reasonable time as allowed by the court, the county may enter upon the property and cause such work as is reasonably necessary to be performed, with the actual cost thereof charged to the owner in the same manner as a stormwater service fee as provided for in this article.

(b) In the event that the county shall file an action pursuant to subsection 99-107(a), from the date of filing such action the county shall have all rights of judgment and collection through a court of competent jurisdiction as may be perfected by action.

(c) The county shall have the right, pursuant to the authority of this article, for its designated officers and employees to enter upon private property and public property owned by other than the county, upon reasonable notice to the owner thereof, to inspect the property and conduct surveys and engineering tests thereon in order to assure compliance with any order or judgment entered pursuant to this section.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-108. - General funding policy.

(a) It shall be the policy of Beaufort County that funding for the stormwater management utility program, services, systems, and facilities shall be equitably derived through methods which have a demonstrable relationship to the varied demands and impacts imposed on the stormwater program, services, systems, and facilities by individual properties or persons and/or the level of service rendered by or resulting from the provision of stormwater programs, systems and facilities. Stormwater service fee rates shall be structured so as to be fair and reasonable, and the resultant service fees shall bear a substantial relationship to the cost of providing services and facilities throughout the county. Similarly situated properties shall be charged similar rentals, rates, fees, or licenses. Service fee rates shall be structured to be consistent in their application and shall be coordinated with the use of any other funding methods employed for stormwater management within the county, whether wholly or partially within the unincorporated portions of the county or within the cities and towns. Plan review and inspection fees, special fees for services, fees in-lieu of regulatory requirements, impact fees, system development fees, special assessments, general obligation and revenue bonding, and other funding methods and mechanisms available to the county may be used in concert with stormwater service fees and shall be coordinated with such fees in their application to ensure a fair and reasonable service fee rate structure and overall allocation of the cost of services and facilities.

(b) The cost of stormwater management programs, systems, and facilities subject to stormwater service fees may include operating, capital investment, and non-operating expenses, prudent operational

and emergency reserve expenses, and stormwater quality as well as stormwater quantity management programs, needs, and requirements.

(c) To the extent practicable, adjustments to the stormwater service fees will be calculated by the Beaufort County Stormwater Manager in accordance with the standards and procedures adopted by the Stormwater Manager's office.

(d) The stormwater service fee rate may be determined and modified from time to time by the Beaufort County Council so that the total revenue generated by said fees and any other sources of revenues or other resources allocated to stormwater management by the county council to the stormwater management utility shall be sufficient to meet the cost of stormwater management services, systems, and facilities, including, but not limited to, the payment of principle and interest on debt obligations, operating expense, capital outlays, nonoperating expense, provisions for prudent reserves, and other costs as deemed appropriate by the county council.

Beaufort County service fee rate will be based on impervious and gross area at an 80/20 allocation; storm water service fee categories; any State agricultural exemptions or caps; an account administrative fee, countywide jurisdiction operation maintenance and jurisdictional operation, maintenance and capital project fee. The rates are set by the Beaufort County Stormwater Rate Study dated August 18 and adopted August 24, 2015.

The gross area charge for all parcels, EXCEPT master account properties for condominiums, is calculated in equivalent units as follows:

First 2 acres	$X per acre
For every acres above 2 acres and up to 10 acres	0.5 x $X
For every acre above 10 acres, and up to 100 acres	0.4 x $X
For very acre above 100 acres	0.3 x $X

Condominium accounts will receive a minimum gross area charge of 0.2 x $X. The master account associated with the condominium subdivision will not receive a gross area charge.

Each municipal jurisdiction may have a different fee predicated upon the municipal jurisdiction's revenue needs. The stormwater service fee rates shall be adopted by the municipal jurisdictions and may be amended from time to time by the individual governing body.

(Ord. No. 2015/24, 9-28-2015; Ord. No. 2016/ , - -2016)

Sec. 99-109. - Exemptions and credits applicable to stormwater service fees.

Except as provided in this section, no public or private property shall be exempt from stormwater utility service fees. No exemption, credit, offset, or other reduction in stormwater service fees shall be granted based on the age, tax, or economic status, race, or religion of the customer, or other condition unrelated to the stormwater management utility's cost of providing stormwater programs, services, systems, and facilities. A stormwater management utility service fee credit manual shall be prepared by the Stormwater Manager specifying the design and performance standards of on-site stormwater services, systems, facilities, and activities that qualify for application of a service fee credit, and how such credits shall be calculated.

DRAFT

(a) Credits. The following types of credits against stormwater service fees shall be available:

(1) Freshwater wetlands. All properties except those classified as detached single-family dwelling units may receive a credit against the stormwater service fee applicable to the property based on granting and dedicating a perpetual conservation easement on those portions of the property that are classified as freshwater wetlands and as detailed in the stormwater management utility service fee credit manual. The conservation easement shall remove that portion of the subject property from any future development.

(2) Salt Water Marsh. All properties except those classified as detached single-family dwelling units may receive a credit against the stormwater service fee applicable to the property based on those portions of the property that are classified as salt water marsh and as detailed in the stormwater management utility service fee credit manual.

(3) Submerged properties. All properties may receive a credit against the stormwater service fee applicable to the property based on those portions of the property that are classified as submerged and as detailed in the stormwater management utility service fee credit manual.

(~~2~~)(4) Those properties that apply for consideration of an adjustment shall satisfy the requirements established by the Beaufort County Stormwater Manager and approved reduced stormwater service fee.

Formatted: Indent: Hanging: 0.4"

Formatted: Strikethrough

(b) Exemptions. The following exemptions from the stormwater service fees shall be allowed:

(1) Improved public road rights-of-way that have been conveyed to and accepted for maintenance by the state department of transportation and are available for use in common for vehicular transportation by the general public.

(2) Improved public road rights-of-way that have been conveyed to and accepted for maintenance by Beaufort County and are available for use in common for vehicular transportation by the general public.

(3) Improved private roadways that are shown as a separate parcel of land on the most current Beaufort County tax maps and are used by more than one property owner to access their property.

(4) Railroad tracks shall be exempt from stormwater service fees. However, railroad stations, maintenance buildings, or other developed land used for railroad purposes shall not be exempt from stormwater service fees.

(5) Condominium boat slips shall be exempt from stormwater service fees.

(6) Properties determined by the Assessor having 100% of the gross area of the property submerged, salt water marsh, or freshwater wetland will not receive an administrative charge, if applicable in the utility rate structure, AFTER the applicable credit defined in paragraph (a) above has been applied to the account.

(Ord. No. 2015/24, 9-28-2015; Ord. No. 2016/ , - -2016)

Sec. 99-110. - Stormwater service fee billing, delinquencies and collections.

(a) Method of billing. A stormwater service fee bill may be attached as a separate line item to the county's property tax billing or may be sent through the United States mail or by alternative means, notifying the customer of the amount of the bill, the date the fee is due (January 15), and the date when past due (March 17 - see Title 12, Section 45-180 of the South Carolina State Code). The stormwater service fee bill may be billed and collected along with other fees, including but not limited to the Beaufort County property tax billing, other Beaufort County utility bills, or assessments as deemed most effective and efficient by the Beaufort County Council. Failure to receive a bill is not

DRAFT

justification for non-payment. Regardless of the party to whom the bill is initially directed, the owner of each parcel of land shall be ultimately obligated to pay such fees and any associated fines or penalties, including, but not limited to, interest on delinquent service fees. If a customer is under-billed or if no bill is sent for a particular property, Beaufort County may retroactively bill for a period of up to one-year, but shall not assess penalties for any delinquency during that previous unbilled period.

(b) Declaration of delinquency. A stormwater service fee shall be declared delinquent if not paid within 60 days of the date of billing or upon the date (March 17) of delinquency of the annual property tax billing if the stormwater service fee is placed upon the annual property tax billing or enclosed with or attached to the annual property tax billing.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-111. - Appeals.

Any customer who believes the provisions of this article have been applied in error may appeal in the following manner and sequence.

(a) An appeal of a stormwater service fee must be filed in writing with the Beaufort County Stormwater Manager or his/her designee within 30 days of the fee being mailed or delivered to the property owner and stating the reasons for the appeal. In the case of stormwater service fee appeals, the appeal shall include a survey prepared by a registered land surveyor or professional engineer containing information on the impervious surface area and any other feature or conditions that influence the development of the property and its hydrologic response to rainfall events.

(b) Using information provided by the appellant, the county Stormwater Manager (or his or her designee) shall conduct a technical review of the conditions on the property and respond to the appeal in writing within 30 days. In response to an appeal, the Stormwater Manager may adjust the stormwater service fee applicable to the property in conformance with the general purposes and intent of this article.

(c) A decision of the county Stormwater Manager that is adverse to an appellant may be further appealed to the county administrator or his designee within 30 days of the adverse decision. The appellant, stating the grounds for further appeal, shall deliver notice of the appeal to the county administrator or his designee. The county administrator or his designee shall issue a written decision on the appeal within 30 days. All decisions by the county administrator or his designee shall be served on the customer personally or by registered or certified mail, sent to the billing address of the customer. All decisions of the county administrator or his designee shall be final.

(d) The appeal process contained in this section shall be a condition precedent to an aggrieved customer seeking judicial relief. Any decisions of the county administrator or his designee may be reviewed upon application for writ of certiorari before a court of competent jurisdiction, filed within 30 days of the date of the service of the decision.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-112. - No suspension of due date.

No provision of this article allowing for an administrative appeal shall be deemed to suspend the due date of the service fee with payment in full. Any adjustment in the service fee for the person pursuing an appeal shall be made by refund of the amount due.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-113. - Enforcement and penalties.

DRAFT

Any person who violates any provision of this article may be subject to a civil penalty of not more than $1,000.00, or such additional maximum amount as may become authorized by state law, provided the owner or other person deemed to be in violation has been notified of a violation. Notice shall be deemed achieved when sent by regular United States mail to the last known address reflected on the county tax records, or such other address as has been provided by the person to the county. Each day of a continuing violation may be deemed a separate violation. If payment is not received or equitable settlement reached within 30 days after demand for payment is made, a civil action may be filed on behalf of the county in the circuit court to recover the full amount of the penalty. This provision on penalties shall be in addition to and not in lieu of other provisions on penalties, civil or criminal, remedies and enforcement that may otherwise apply.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-114. - Investment and reinvestment of funds and borrowing.

Funds generated for the stormwater management utility from service fees, fees, rentals, rates, bond issues, other borrowing, grants, loans, and other sources shall be utilized only for those purposes for which the utility has been established as specified in this article, including but not limited to: regulation; planning; acquisition of interests in land, including easements; design and construction of facilities; maintenance of the stormwater system; billing and administration; water quantity and water quality management, including monitoring, surveillance, private maintenance inspection, construction inspection; public information and education, and other activities which are reasonably required. such funds shall be invested and reinvested pursuant to the same procedures and practices established by Title 12, Section 45-70 of the South Carolina State Code for investment and reinvestment of funds. County council may use any form of borrowing authorized by the laws of the State of South Carolina to fund capital acquisitions or expenditures for the stormwater management utility. County council, in its discretion and pursuant to standard budgetary procedures, may supplement such funds with amounts from the general fund.

(Ord. No. 2015/24, 9-28-2015)

Sec. 99-115. - Responsibilities of the stormwater management utility.

The county stormwater management utility shall perform adequate studies throughout the area served by the utility to determine the following:

(1) Baseline study of water quality in the receiving waters;

(2) Identification of pollutants carried by stormwater runoff into the receiving waters;

(3) Recommended mitigation efforts to address pollutants carried by stormwater runoff into the receiving waters;

(4) Inventory of the existing drainage system;

(5) Recommended maintenance practices and standards of the existing drainage system;

(6) Identification of capital improvements to the system to include construction or installation of appropriate BMPs.

(7) A five-year spending plan.

(8) Ensure compliance with the federally mandated MS4 permit requirements

(9) Efficient utility administration including but not limited to billing, collection, defining rate structures, data management and customer support.

(Ord. No. 2015/24, 9-28-2015)

DRAFT

Sec. 99-116. - Stormwater utility management board.

(1) Purpose. In compliance with and under authority of Beaufort County Ordinance 2001/23, the Beaufort County Council hereby establishes the stormwater management utility board (hereinafter referred to as the "SWU board") to advise the council as follows:

(a) To determine appropriate levels of public stormwater management services for residential, commercial, industrial and governmental entities within Beaufort County;

(b) To recommend appropriate funding levels for provision of services in the aforementioned sectors;

(c) To advise the staff of the stormwater management utility on master planning efforts and cost of service/rate studies; and

(d) To support and promote sound stormwater management practices that mitigates non-point source pollution and enhances area drainage within Beaufort County.

Municipal councils are encouraged to organize similar boards to advise them on stormwater management programs and priorities within their boundaries.

In keeping with discussions held during the formation of the stormwater utility, it is anticipated that the municipalities will appoint staff professionals as their representative on the advisory board.

(2) Stormwater districts. Stormwater districts are hereby established as follows:

District 1 - City of Beaufort

District 2 - Town of Port Royal

District 3 - Town of Hilton Head Island

District 4 - Town of Bluffton

District 5 - Unincorporated Sheldon Township

District 6 - Unincorporated Port Royal Island

District 7 - Unincorporated Lady's Island

District 8 - Unincorporated St. Helena Island Islands East

District 9 - Unincorporated Bluffton Township and Daufuskie Island

(3) Membership.

(a) The SWU board is formed in accordance with Beaufort County Ordinance 92-28 and shall consist of a total of seven voting representatives from each of the following districts as noted below:

No. of Reps.	Stormwater District	Area
1	5	Unincorporated Sheldon Township
1	6	Unincorporated Port Royal Island
1	7	Unincorporated Lady's Island

DRAFT

1	8	Unincorporated St. Helena Island Islands East
2	9	Unincorporated Bluffton Township and Daufuskie Island
1	—	"At large"

All members of the SWU board will be appointed by county council and shall be residents of those districts or "at large" members from unincorporated Beaufort County.

(b) The SWU board shall also consist of one nonvoting (ex officio) representative from the following districts:

Stormwater District	Municipality
1	City of Beaufort
2	Town of Port Royal
3	Town of Hilton Head Island
4	Town of Bluffton

All ex officio members from municipalities shall be appointed by their respective municipal councils for four-year terms.

(c) All citizen members shall be appointed for a term of four years. The terms shall be staggered with one or two members appointed each year.

(d) While no other eligibility criteria is established, it is recommended that members possess experience in one or more of the following areas: Stormwater management (drainage and water quality) issues, strategic planning, budget and finance issues or established professional qualifications in engineering, construction, civil engineering, architectural experience, commercial contractor or similar professions.

(4) Officers.

(a) Officers. Selection of officers and their duties as follows:

1. Chairperson and vice-chair. At an annual organizational meeting, the members of the SWU board shall elect a chairperson and vice-chairperson from among its members. The chair's and vice-chair's terms shall be for one year with eligibility for reelection. The chair shall be in charge of all procedures before the SWU board, may administer oaths, may compel the attendance of witnesses, and shall take such action as shall be necessary to preserve order and the integrity of all proceedings before the SWU board. In the absence of the chair, the vice-chair shall act as chairperson.

DRAFT 6

2. Secretary. The county professional staff member shall appoint a secretary for the SWU board. The secretary shall keep minutes of all proceedings. The minutes shall contain a summary of all proceedings before the SWU board, which include the vote of all members upon every question, and its recommendations, resolutions, findings and determinations, and shall be attested to by the secretary. The minutes shall be approved by a majority of the SWU board members voting. In addition, the secretary shall maintain a public record of SWU board meetings, hearings, proceedings, and correspondence.

3. Staff. The Stormwater Manager shall be the SWU board's professional staff.

(b) Quorum and voting. Four SWU board members shall constitute a quorum of the SWU board necessary to take action and transact business. All actions shall require a simple majority of the number of SWU board members present.

(c) Removal from office. The county council, by a simple majority vote, shall terminate the appointment of any member of the SWU board and appoint a new member for the following reasons:

1. Absent from more than one-third of the SWU board meetings per annum, whether excused or unexcused;

2. Is no longer a resident of the county;

3. Is convicted of a felony; or

4. Violated conflict of interest rules according to the county-adopted template ordinance.

Moreover, a member shall be removed automatically for failing to attend any three consecutive regular meetings.

(d) Vacancy. Whenever a vacancy occurs on the SWU board, the county council shall appoint a new member within 60 days of the vacancy, subject to the provisions of this section. A new member shall serve out the former member's term.

(e) Compensation. The SWU board members shall serve without compensation, but may be reimbursed for such travel, mileage and/or per diem expenses as may be authorized by the SWU board-approved budget.

(5) Responsibilities and duties.

(a) Review and recommend to the county council for approval, a comprehensive Beaufort County Stormwater Management Master Plan and appropriate utility rate study which is in accordance with the South Carolina Stormwater Management and Sediment Reduction Act; and

(b) Review and comment to the county administrator on the annual stormwater management utility enterprise fund budget; and

(c) Cooperate with the South Carolina Department of Health and Environmental Control (DHEC), Office of Coastal Resource Management (OCRM), the Oversight Committee of the Special Area Management Plan (SAMP), the Beaufort County Clean Water Task Force as well as other public and private agencies having programs directed toward stormwater management programs; and

(d) Review and make recommendations concerning development of a multiyear stormwater management capital improvement project (CIP) plan; and

(e) Review and advise on proposed stormwater management plans and procurement procedures; and

(f) Provide review and recommendations on studies conducted and/or funded by the utility; and

(g) Review and advise on actions and programs to comply with regulatory requirements, including permits issued under the State of South Carolina National Pollutant Discharge Elimination

DRAFT

System (NPDES) General Permit for Storm Water Discharges from Regulated Small Municipal Separate Storm Sewer Systems (MS4).

(6) Meetings. Meetings of the SWU board shall be held as established by the SWU board on a monthly basis and a calendar will be prepared giving the date, time and location of such meetings. Additionally, meetings may be called by the chairperson or at the request of four SWU board members. The location of all SWU board meetings shall be held in a public building in a place accessible to the public. The following shall apply to the conduct of all meetings:

(a) Meeting records. The SWU board shall keep a record of meetings, resolutions, findings, and determinations. The SWU board may provide for transcription of such hearings and proceedings, or portions of hearings and proceedings, as may be deemed necessary.

(b) Open to public. All meetings and public hearings of the SWU board shall be open to the public.

(c) Recommendations or decisions. All recommendations shall be by show of hands of all members present. A tie vote or failure to take action shall constitute a denial recommendation. All recommendations shall be accompanied by a written summary of the action and recommendations.

(d) Notice and agenda. The SWU board must give written public notice of regular meetings at the beginning of each calendar year. The SWU board must post regular meeting agendas at the meeting place 24 hours before any meeting. Notices and agenda for call, special or rescheduled meetings must be posted at least 24 hours before such meetings. The SWU board must notify any persons, organizations and news media that request such notification of meetings.

(Ord. No. 2015/24, 9-28-2015)

(Ord. No. 2005/33, § 17, 8-22-2005; Ord. No. 2009/21, §§ I—VI, 5-26-2009; Ord. No. 2015/24, 9-28-2015)

DRAFT B

ORDINANCE NO. 2016/_____

AN ORDINANCE AUTHORIZING THE RELINQUISHMENT OF EASEMENTS ENCUMBERING PROPERTY IDENTIFIED AS TMS No. R100 028 000 0381 0000

WHEREAS, on or about December 19, 2012, MCAS Beaufort agreed to deed Beaufort County a thirty-foot (30') drainage easement located on the southern property line of real property identified as TMS No. R100 028 000 0381 0000 in connection to the construction of a ditch; and

WHEREAS, a thirty-foot (30') drainage easement was recorded with the Beaufort County Register of Deeds at Book 3204/ Page 2401-03; and

WHEREAS, on or about February 7, 2013, MCAS Beaufort agreed to deed Beaufort County another thirty-foot (30') drainage easement located on the eastern property line of real property identified as TMS No. R100 028 000 0381 0000 in connection to the construction of a ditch; and

WHEREAS, a thirty-foot (30') drainage easement was recorded with the Beaufort County Register of Deeds at Book 3215/ Page 611-13; and

WHEREAS, Beaufort County failed at the time to build the ditch due to permitting restrictions related to the wetlands on the parcel; and

WHEREAS, Beaufort County has determined that construction of a short ditch on the southwest corner of the property along with maintenance of a preexisting ditch on the parcel will improve its outfall, benefit surrounding residences and eliminate the need to construct either of the ditches on the easements referred to above all to the benefit of the property owner and the County; and

WHEREAS, Beaufort County and the property owner now agree that the property owner will deed to Beaufort County a thirty-foot (30') drainage easement on the southwest corner of real property identified as TMS No R100 028 000 0381 000 in exchange for which the County will relinquish the two (2) previous thirty-foot (30') drainage easements referred to above; and

WHEREAS, Beaufort County Council has determined it is in County's best interest to relinquish the two thirty-foot (30') easements which are attached hereto as Exhibit "A"; and

WHEREAS, S.C. Code Ann. §4-9-130 requires that the transfer of any interest in real property owned by the County must be authorized by the adoption of an ordinance by Beaufort County Council.

NOW, THEREFORE, BE IT ORDAINED, BY BEAUFORT COUNTY COUNCIL, that the County Administrator is hereby authorized to take all actions as may be necessary to relinquish the easements herein described and, with particularity, identified on Exhibit "A".

ADOPTED, this _____ day of _____, 2016.

COUNTY COUNCIL OF BEAUFORT COUNTY

BY: _____

D. Paul Sommerville, Chairman

APPROVED AS TO FORM:

_____

Thomas J. Keaveny, II, County Attorney

ATTEST:

_____

Suzanne M. Rainey, Clerk to Council
First Reading:
Second Reading:
Public Hearing:
Third and Final Reading:

BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA
Wednesday, September 14, 2016
2:00 p.m.
Executive Conference Room, Administration Building
Beaufort County Government Robert Smalls Complex
100 Ribaut Road, Beaufort, South Carolina
843.255.2805

In accordance with South Carolina Code of Laws, 1976, as amended, Section 30-4-80(d), all local media was duly notified of the time, date, place and agenda of this meeting.

DRAFT

1. CALL TO ORDER – 2:00 p.m.
   A. Approval of Agenda
   B. Approval of Minutes – August 10, 2016 (backup)
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
   A. Utility Update – Eric Larson, P.E. (backup)
   B. Monitoring Update – Eric Larson, P.E. (backup)
   C. Stormwater Implementation Committee Report – Eric Larson, P.E. (backup)
   D. Stormwater Related Projects – Eric Larson, P.E. (backup)
   E. Upcoming Professional Contracts Report – Eric Larson, P.E. (backup)
   F. Regional Coordination – Eric Larson, P.E. (backup)
   G. Municipal Reports – Eric Larson, P.E. (backup)
   H. MS4 Update – Rebecca Baker (backup)
   I. Maintenance Projects Report – David Wilhelm (backup)
5. UNFINISHED BUSINESS
6. NEW BUSINESS
   A. Adoption of Revised BMP (Best Management Practices) Manual (backup)
   B. Condemnation Memo for Pond and Common Area Located in Spanish Moss Phase I (Lady's Island) (backup)
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
   A. October 12, 2016 (backup)
9. ADJOURNMENT