



BEAUFORT COUNTY  
STORMWATER MANAGEMENT UTILITY BOARD  
AGENDA

Wednesday, July 2, 2014

2:00 p.m.

Beaufort Industrial Village, Building 3 Conference Room  
104 Industrial Village Road, Beaufort  
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 4, 2014 ([backup](#))
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
  - A. Special Presentation – Lamar Taylor, City of Beaufort
  - B. Utility Update – Eric Larson, P.E. ([backup](#))
  - C. Monitoring Update – Eric Larson, P.E. ([backup](#))
  - D. Stormwater Implementation Committee Report – Eric Larson, P.E. ([backup](#))
  - E. Stormwater Related Projects – Eric Larson, P.E. ([backup](#))
  - F. Upcoming Professional Contracts Report – Eric Larson, P.E. ([backup](#))
  - G. Regional Coordination – Eric Larson, P.E. ([backup](#))
  - H. Financial Report ([backup](#))
  - I. Maintenance Projects Report – Eddie Bellamy ([backup](#))
5. UNFINISHED BUSINESS
6. NEW BUSINESS
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
  - A. August 6, 2014 ([backup](#))
9. ADJOURNMENT



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

June 4, 2014 at 2:00 p.m. in Beaufort Industrial Village Building #2 Conference Room  
Draft as of June 19, 2014

**Board Members**

**Present**

Don Smith  
Patrick Mitchell  
James Fargher  
William Bruggeman

**Absent**

Allyn Schneider

**Ex-Officio Members**

**Present**

Andy Kinghorn  
Scott Liggett  
Kimberly Jones

**Absent**

Van Willis

**Beaufort County Staff**

Bryn Hill  
Eric Larson  
Allison Coppage  
Eddie Bellamy  
Danny Polk  
Alan Eisenman

**Visitors**

Lamar Taylor, City of Beaufort  
Dr. Bud Badr, Southern Water Resources  
Paul Moore, Ward Edwards  
Reed Armstrong, Coastal Conservation League  
Alan Warren, USCB

**1. Meeting called to order – Don Smith**

- A. Agenda – Approved.
- B. April 2, 2014 Minutes – Approved.  
May 7, 2014 Minutes – Approved.

**2. Introductions – Completed.**

**3. Executive Session –** Board members went into Executive Session. The board returned to regular session. Action: The board recommended the utility share in the cost to purchase the Forby tract (10-acre tract) for no more than \$125K with one opposing vote from Mr. Don Smith.

**4. Public Comment(s) – None.**

**5. Reports –** (Mr. Larson submitted his written report in advance. [Please see attachment.](#))

- A. **Special Presentation** – The Water Budget Study is complete and Dr. Bud Badr provided a presentation on the results ([please see attachment](#)).
- B. **Utility Update** – Eric Larson  
*DHEC and MS4 Update* – The County will be submitting for MS4 permit coverage independently of the other MS4s. The county has notified DHEC of their intent to become permitted effective January 1, 2015. As the permit is implemented, the county plan's to find opportunities to partner with the Town of Hilton Head Island and the Town of Bluffton to decrease cost and provide uniformity in the separate programs.
- C. **Monitoring Update** – Mr. Eric Larson  
*USCB Lab* – Mr. Larson and the lab personnel have drafted a schedule with a full implementation date of the lab for county monitoring services to be in the spring of 2015.
- D. **Stormwater Implementation Committee Report** – Eric Larson

May 15<sup>th</sup>, 2014 SWIC Meeting - The topic was Data Management. Members have demoed (3) data management software.

**E. Stormwater Related Projects – Eric Larson**

*Brewer Memorial Park – See “New Business”.*

**F. Upcoming Professional Contracts Report – Eric Larson**

*US 278 retrofit ponds – Bid due date is June 5, 2014.*

*County Administration Complex Retrofit Project – Soliciting proposals from interested contractors.*

*RFP for a stormwater consultant to assist with the setup of the MS4 Program - The RFP will be advertised soon for services to begin in FY2015.*

*SC 170/Okatie West - Developing a concept plan to enhance the project design to address the project runoff as well as the west branch of the Okatie headwaters. He will report more in the future as concepts are developed.*

**G. Regional Coordination - Eric Larson**

*Battery Creek Pond – Mr. Paul Moore said the survey is on-going and should be completed by early next week.*

*Stoney Creek – Ms. Kimberly Jones corrected Mr. Larson’s report and said this project is not funded by an EPA grant. The second EPA grant is for funding the Pineridge pond retrofit project. The Town of Bluffton will be releasing an IFB for the Pineridge stormwater reuse for irrigation. Stoney Creek is part of the May River Watershed Action Plan. Contract has been awarded. Site visit is scheduled ahead of surveying services.*

*Salinity Study - On going. Previously the scope had been modified and expanded with receiving some federal money. First year of the study is complete and successful. DNR will be reporting on this project at the SESWA annual conference in October.*

*Sea Level Rise and future planning – On going research project by DNR. The committee group met on May 15<sup>th</sup> and they are working on prioritizing the proposed action steps to mitigate sea level rise. They will have an action report by August.*

**H. Financial Report and Incorporating the Capital Improvement Fund – Alan Eisenman**

Mr. Eisenman presented the un-audited April interim financial statements for the Stormwater Utility ([please see attachment](#)). Financials are a little different since the Capital Improvement Fund has been implemented. Following are the highlights from his presentation:

- Actual April FY14 revenues are \$86K more than Actual April FY13 revenues.
- Actual April FY14 expenses are at 68% of budget for FY13.
- Unrestricted Fund Balance from Balance Sheet combined with the Capital Improvement Fund increased by \$166K since last FY at this time.

Cash from Balance Sheet combined with the Capital Improvement Fund increased by \$169K since last FY at this time.

**I. FY 2015 Revised Proposed Budget including Capital Projects – Eric Larson**

The proposed budget has been revised to be more realistic ([please see attachment](#)). Revenue is consistently declining slightly and he believes it’s from annexing. Both the revenue projection and the proposed expenditures have been decreased.

Mr. Larson has compiled a list and staff has created project sheets for all the projects he has identified that are proposed to be constructed and programmed them out over 10 years ([please see attachment](#)).

**J. Maintenance Projects Report – Mr. Eddie Bellamy reported on (2) major projects, Clydesdale Circle and Holly Hall Road. *Because of time, he forwent the presentation on the (19) minor and/or routine maintenance projects.***

**6. Unfinished Business – Eric Larson**

- A. *Public Education Branding* – The SWIC has recommended the shared use of the Town Of Bluffton’s “Neighbors for Clean Water” slogan for all public education efforts county wide. Our County Administration concurs. The Board supports the Public Education Branding concept.

**7. New Business** – Eric Larson

A. *Brewer Memorial Park Project* – Eric Larson

This proposed project is located near the Factory Creek fishing pier. The Open Land Trust has asked the utility to consider a detention basin project to retrofit an existing pond. If the utility modify the pond then the Open Land trust will build the boardwalk. The board members recommend the utility pursue this demonstration project.

**8. Public Comment** –

Ms. Jones reminded the board members that the Okatie 319 composting unveiling party is scheduled for that evening.

Mr. Reed Armstrong suggested the next time the board has an executive session that they allow the guest speaker to present before the executive session.

**9. Next Meeting Agenda** – Approved.

**10. Meeting Adjourned.**



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



June 4, 2014

**Stormwater Manager's report for the Stormwater Utility Board Meeting**

Utility Update

1. DHEC and MS4 update – After much discussion with the County Administration and our counterparts in the Towns of Hilton Head and Bluffton, we have concluded that the County will need to submit for MS4 permit coverage independently of the other MS4s. As the permit is implemented, we plan to find opportunities to partner with them to decrease cost and provide uniformity in the separate programs. We have notified DHEC of our intent to become permitted effective January 1, 2015. We are awaiting the notification letter from DHEC setting these timeframe.
2. Budget for FY15 –The County Administrator's office has reviewed a series of proposed changes to our budget and has verbally agreed that the budget is acceptable. [A summary of the revisions](#) is included in the June board packet and will be explained during the meeting.
3. Larson, E. Miller, D. Polk, and Charles Bush attended the Charleston Area Pond Conference on May 22, 2014. It had very good content on pond design, maintenance, water quality benefits, problems often associated with use (including hazard material disposal of dredged sediment), and concluded the day with a keynote address from David Wilson, Chief of the DHEC Bureau of Water.
4. Eric Larson's [summary report on the APA Conference in April](#) is attached.
5. Josh Gruber will provide an update on various topics in an Executive Session during the meeting.

Monitoring Update

1. USCB Lab – Other monitoring activities are on-going. The lab and our office have set a full implementation date of the lab for county monitoring services to be in the spring of 2015. See attached [draft schedule](#) which is subject to revision.

Stormwater Implementation Committee (SWIC) report

1. The SWIC met on May 15, 2014. The topic was Data Management. ([See attached draft minutes](#))
2. ACTION REQUESTED = Public Education Branding – The SWIC has recommended the shared use of the Town Of Bluffton's "Neighbors for Clean Water" slogan for all public education efforts county wide. Our County Administration concurs. I recommend the Board's support of the joint branding effort.

### Stormwater related Projects

1. Proposed Carolina Jellyball processing facility in Lobeco and unloading facility on Golden Dock Road in St. Helena Island – Nothing new to report since last month.
2. Drainage issue on H.E. McCracken Circle in Bluffton – Nothing new to report since last month.
3. US 278 at Kitty's Crossing Overtopping issue – Nothing new to report since last month.
4. Infrastructure crew performed on-going maintenance needs. Nothing significant to report.
5. ACTION REQUESTED = Brewer Memorial Park – Possible Stormwater project – The Open Land Trust has asked us to consider a detention basin project to retrofit an existing pond. [See attached draft letter proposal.](#) I recommend the Board's endorsement of the project.

### Professional Contracts Report

1. US 278 retrofit ponds – Bid due date is June 5, 2014.
2. County Admin. Complex Retrofit Project – We are soliciting proposals from interested contractors.
3. Consultant procurement for the Carolina Jellyball application for the Lebeco site is still on hold pending a submittal from the applicant.
4. A RFP for a stormwater consultant to assist with the setup of the MS4 program will be advertised soon for services to begin in FY2015.
5. Water Budget Study – Dr. Badr will be presenting the findings to the Board during the June Board meeting. A [copy of the report](#) was sent to the Board earlier this past month.
6. Okatie East BMP monitoring – Ongoing. Nothing new to report since last month.
7. Trask Parkway Overtopping study – The project is on hold pending review of available modeling data.
8. SC 170 widening and stormwater – Due to some concerns raised by an adjacent property owner, Mr. Kubic asked me to review the stormwater design for the project. I am developing a concept plan to enhance the project design to address the project runoff as well as the west branch of the Okatie headwaters. I will report more in the future as concepts are developed.

### Regional Coordination

1. Battery Creek Pond funded by an EPA 319 grant – Still in design phase. (Lamar Taylor may report)
2. Stoney Creek watershed plan funded by an EPA 319 grant – Proposals from consultants are currently being reviewed. (Kim Jones may report)
3. Salinity Study - On going. Nothing new to report.
4. Sea Level Rise and future planning – On going. The committee met on May 15<sup>th</sup> and discussed the sea level rise model and brainstormed planning and development issues that need to be addressed concerning this topic.

# Beaufort County Public Works Stormwater Utility

## Preliminary Budget Comparison

Revised Date: May 19, 2014

### Unaudited Projected Revenue

|                              | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|------------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| <b>Revenue</b>               |                                        |                                        |                             |
| Admin SWU Fees               | 312,064                                | 313,460                                | 313,460                     |
| Utility Activities SWU Fees  | 3,162,936                              | 2,814,138                              | 2,766,881                   |
| <b>Revenue from SWU Fees</b> | <b>3,475,000</b>                       | <b>3,127,598</b>                       | <b>3,080,341</b>            |
| Reimbursable Projects        | 2,500                                  | 2,500                                  | 2,500                       |
| Interest                     | 6,923                                  | 2,955                                  | 2,955                       |
| Cost-Share for Joint Efforts | 57,522                                 | 41,689                                 | 41,689                      |
| <b>Reserve Utilization</b>   |                                        |                                        |                             |
| Del Webb Agreement Fund      | -                                      | -                                      |                             |
| Stormwater Utility           | -                                      | 413,581                                | 351,091                     |
|                              | <b>3,541,945</b>                       | <b>3,588,323</b>                       | <b>3,478,576</b>            |

### Efforts (Expenditures)

|                                     | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|-------------------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| Admin                               | 312,064                                | 323,941                                | 313,460                     |
| <b>Utility Activities</b>           |                                        |                                        |                             |
| UA/Control Reg                      | 73,147                                 | 257,274                                | 216,956                     |
| UA/WQ Monitoring                    | 160,000                                | 120,000                                | 120,000                     |
| UA/WQ Controls                      | 200,000                                | -                                      | -                           |
| UA/Annual Maintenance               | 2,679,069                              | 2,783,108                              | 2,736,160                   |
| UA/Public Information/Outreach      | 67,665                                 | 50,000                                 | 50,000                      |
| UA/Drainage Enhancement             | 25,000                                 | 19,000                                 | 7,000                       |
| UA/Additional Studies               | 25,000                                 | 35,000                                 | 35,000                      |
| <i>Utility Activities Subtotal</i>  | <b>3,229,881</b>                       | <b>3,264,382</b>                       | <b>3,165,116</b>            |
| <b>*Reserve Utilization</b>         |                                        |                                        |                             |
| <i>Reserve Utilization Subtotal</i> | -                                      | -                                      | -                           |
| <b>Efforts Total</b>                | <b>3,541,945</b>                       | <b>3,588,323</b>                       | <b>3,478,576</b>            |

\*Efforts funded by utilizing the reserve are spread among all utility activities.

### Change in Capital Assets On Balance Sheet

|                          | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|--------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| Capital Assets Additions | 455,991                                | 340,604                                | 166,561                     |
| Depreciation             | (242,119)                              | (192,181)                              | (182,523)                   |
|                          | 213,872                                | 148,423                                | (15,962)                    |

### SUMMARY

|                                                            | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|------------------------------------------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| Cash Balance                                               | -                                      | -                                      | 1,611,101                   |
| Revenue                                                    | -                                      | -                                      | 3,127,485                   |
| Revenue - SFU Rate Increase                                | -                                      | -                                      |                             |
| Expenditures (Includes Depreciation)                       | -                                      | -                                      | (3,478,576)                 |
| Capital Purchases                                          | -                                      | -                                      | (166,561)                   |
| Reserve Policy                                             | -                                      | -                                      | -                           |
| Capital Projects                                           | -                                      | -                                      | (845,999)                   |
|                                                            | -                                      | -                                      | 247,450                     |
| Operating Income (Loss) (15.1% of<br>SWI Personnel Budget) | -                                      | -                                      | 278,366                     |
| <b>Reserve</b>                                             | -                                      | -                                      | 525,816                     |



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**INTEROFFICE MEMORANDUM**

**TO:** Rob McFee, Director of Engineering and Infrastructure

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

**SUBJECT:** Re-Cap of the APA National Conference in Atlanta, GA on April 26-30, 2014

**DATE:** May 9, 2014

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I attended the American Planning Association national annual conference in Atlanta, GA on April 26 to April 30, 2014. Even though it was a Planning conference and I do not actively work in Planning, there was a full agenda of stormwater related topics that I was able to attend.

There is a large focus on sustainability related to climate change and sea level rise. Many presentations I attended focused on planning development in coastal areas to minimize future damages by storm surge and sea level rise, as well as recovery plans. I sat in on discussions on the Georgia Coast, Florida Gulf Coast, and New Orleans area. All three had common themes: modeling sea level rise, planning for critical infrastructure (roads and buildings) within these areas, strategies to improve them, and policies to re-build them if damaged by a storm event or eventual inundation by higher water levels.

Another trend in topics was legal issues related to "takings". Ironically, many of the recent cases that APA is educating its members on are related to takings due to stormwater related restrictions on properties, such as buffers and building restrictions for water elevation freeboard. Most cases were in favor of the defendant, or property owner / developer. The key argument seems to be on whether or not the property owner has been denied all economic use of the property. Buffer restrictions that don't allow any use or disturbance would be an example of a total taking while a buffer that allows viewshed clearing, passive parks, or similar feature provides a value and not considered a total taking. Rob Merchant in our Planning Department told me our regulations are careful to allow economic use of the property in buffers to avoid such legal challenges.

A third category was based on economic development through green infrastructure. Several presentations tied urban blight and redevelopment efforts to sustainable development that created pedestrian friendly, new urbanism type improvements. Most, if not all, of these ideas use green infrastructure practices such as bioswales and pervious pavements to improve the aesthetics of the area without the need for traditional stormwater infrastructure. I was particularly interested in this topic since it is in line with the discussion our administration has been having concerning redevelopment of the Buckingham Plantation / Anolyn Ct. area.

Of course, the reason I attended the conference was my participation as moderator and presenter on a panel discussion of green infrastructure and barriers often encountered trying to implement the same. I presented as a case study the proposed Form Based Code along with past green infrastructure projects developed at the University of Kentucky during my tenure. The session was well attended with standing room only.

April 23, 2014

## Draft timeline for USCB Lab "Next Steps" Strategic Plan

Developed by Eric Larson and Dr. Alan Warren

1. Complete equipment purchase - April 2014
2. Training on new equipment - April 2014
3. Field training on County monitoring stations and equipment - Feb. 2014 to June 2014
4. Begin duplicate sampling with County (to establish certification data) - June 2014
5. Town of Bluffton renewed contract with USCB Lab - July 2014
6. Lab offers services to property management entities within the County (eg. Palmetto Bluff, Sea Pines, Palmetto Dunes, others) for routine water quality monitoring - ongoing
7. Lab submits certification applications to DHEC for all certifiable methods per County's monitoring needs - January 2015
8. Discontinue use of GEL Engineering services for the County - ongoing as individuals assays are approved beginning January 2015 through April 2015 (subject to DHEC schedule)
9. County begins re-assessment of monitoring needs, with USCB lab support, to develop a MS4 compliant program. Begin additional certifications as needed - January 2015.
10. USCB Lab and County to begin discussions with Town of Hilton Head Island to join the County's collaborative effort to utilize the lab of stormwater monitoring. (The Town of Hilton Head renewed a contract with GEL Engineering in the spring of 2014) - January 2015.
11. USCB Lab reassesses workload and capabilities to expand services beyond local government and current clients - Spring 2015
12. USCB Lab and County to begin discussions with military installations to join the County's collaborative effort to utilize the lab of stormwater monitoring - Fall 2015.
13. USCB Lab and County to begin discussions with private industries to join the County's collaborative effort to utilize the lab of stormwater monitoring - 2016.
14. USCB and County begin to discuss development of a water quality curriculum to support sampling and testing workload, develop professional for internships and degrees in the field, and provide public education and outreach efforts for the community - 2016.

DRAFT Minutes - SWIC Meeting May 15, 2014 - BJWSA Community Room 1:30 pm - 3pm

1. Introductions
  - a. Attendees: Kim Jones, Carl Norris, Bryan McIlwee, Bates Rambow, Lamar Taylor, Eric Larson, Seth Stanbery
  - b. Not present - Tony Maglione
2. Minutes from April 3, 2014 - approved by common consent.
3. MS4 data management / Asset Management Software(s)
  - a. Product(s)
    - i. EnerGov - City of Charleston and County of Charleston going to it. Bryan says Tyler Technologies is working on a MS4 module. The software is customizable but requires Tyler to do the changes. Seth says Horry County has been using it for years. They recommended against it. Horry Co. is using it for initial building permitting, and const. inspections, plan review, and code enforcement. GIS is tied to tax map number, not GIS coordinate, so subdividing losses history of records.
    - ii. Cityworks - Horry County also used this in the past and present. It has a good mapping component. Citizen complaint / Work order request module, IDDE, Post Const. inspections, reporting, and mobile based. Seth says it appears that Cityworks and EnerGov are the two softwares that most SC communities are using.
    - iii. Permit Tracker and Gilware - Old softwares developed by Woolpert and formerly used by Charleston County.
    - iv. Geosync Go - Eric noted it is cheap and web based. Does asset management.
    - v. MS4web - Carl and Eric noted this software. Eric has used it. Good software but lacked GIS interface with ERSI. Carl noted with a sales flyer that they are now advertising that it does. Also very cheap license. Web based.
    - vi. Iworq - Eric mentioned it but didn't recommend it.
  - b. Existing tool(s)
    - i. ToB uses Munis for Finance. EnerGov for building permits, stormwater for EPSC inspections, Certificates of Compliance and CO. Migrating to enterprise version. Bill is looking into what modules are needed to make it work for MS4 reporting.
    - ii. ToHHI uses Munis for Finance. EnerGov for building permits, stormwater for EPSC inspections, Certificates of Compliance and CO. Just went live using it last week.
    - iii. BC does not have anything but looks as if will need to use Munis for inspections.
    - iv. CoB doesn't have anything that they use as of now. Use hard copy files and scanned files. No software.
    - v. ToPR not present but it was assumed they do not use anything software at this time.
    - vi. Issues with EnerGov are that it does not work well with Esri GIS then though it is marketed that way.
    - vii. ArcGIS -Bates says it works well for inventory. Keeps inspections but can't do scheduling of future inspections. Asset management can be done if the fields are set up properly. Scheduling it probably possible using a Microsoft product but it would require someone to custom program the module(s). Bates presented the example of Gwinnett County, GA and how they do analysis of asset based on scoring.

c. Software Needs

- i. MCM 1 and 2.
  - 1. Pub Ed. Tracking.
  - 2. Citizen Complaints.
- ii. MCM 3
  - 1. Citizen Complaints.
  - 2. Complaint response.
  - 3. Mapping / Inventory.
  - 4. Routine Inspections of outfalls. - local gov. add in for water systems from Esri works well, according to Bates.
  - 5. Enforcement.
  - 6. Training.
- iii. MCM 4
  - 1. Plan review.
  - 2. Inspections.
  - 3. Enforcement.
  - 4. Training - staff and public.
- iv. MCM 5
  - 1. Plan review.
  - 2. Inspection post-construction.
  - 3. Enforcement.
  - 4. Training - staff, public for maintenance.
- v. MCM 6
  - 1. Inventory of facilities and structural controls.
  - 2. Routine inspections.
  - 3. Training.
- vi. MCM 7 - Monitoring
  - 1. Field sampling events.
  - 2. Data analysis.
- vii. Non-NPDES tasks
  - 1. Work orders for O&M.

4. Action Items

- a. Do demo of MS4web. Seth and Eric will set up.
- b. Do demo of Geosync Go. Seth and Eric will set up.
- c. Research ESRI GIS for asset management. Seth, Bates, and Carl to continue to review.
- d. Permit tracking - Everyone will be doing own thing but it appears will be using similar softwares so user group sharing of ideas may be possible..
- e. Tara and Bill with ToB to discuss how EnerGov can be used for stormwater reporting.

5. Procurement

- a. See #6.
- b. EnerGov and Munis is already owned by all so likely not an issue.

6. Cost Sharing and Collaboration

- a. County willing to pay for MS4 software if less than \$20,000 (corrected). This is the budgeted amount currently proposed in the SWU Management fee.

7. Other issues

- a. None noted.

8. Next Meeting - July 9, 2014. June meeting to be canceled due to schedule conflicts. Topic: MCM6- Good Housekeeping. Ask Tony M. to run the meeting due to his experience with writing SC MS4 permits and in an effort to share leadership roles among the municipalities in the SWIC.
9. Adjourned approx. 3:00 p.m.



**BEAUFORT COUNTY STORMWATER UTILITY**  
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May 28, 2014

Mr. Josh Bell  
Land Protection Coordinator  
Beaufort Open Land Trust  
1001 Bay Street  
Beaufort, SC 29901

RE: Brewer Memorial Park – Proposed Stormwater Demonstration Project

Dear Mr. Bell,

In review of the plan to create this park, you and I recently discussed a potential conversion of an existing and abandoned fish bait pond on the site into a stormwater detention facility. Given the high profile site, I believe this project to be an excellent opportunity to create a demonstration project featuring a stormwater best management practice (BMP) to capture, retain, and treat runoff before it is discharged into the adjacent Factory Creek.

I have recommended that the Beaufort County Stormwater Utility support the development of the demonstration site through a series of phases, the first being a feasibility study by an engineering consultant. This study will investigate the existing hydrology and hydraulics of the area to determine if the pond can be built and provide a benefit. Should this study prove viable, the next phases would be design and construction. These phases would be funded by the Utility with the understanding that the Beaufort Open Land Trust and its partners would fund site amenities such as a boardwalk, landscaping, and viewing access to allow visitors to enjoy this feature and learn more about water quality through the use of this BMP.

Budget would be as follows:  
Feasibility Study = \$9,500  
Design Phase = \$20,000  
Construction Phase = \$50,000  
Site Amenities = TBD

**On June 4, 2014, the Beaufort County Stormwater Utility Board reviewed and endorsed this project.** This letter serves as a proposal to the Beaufort Open Land Trust Board for consideration.

If you have any questions, please contact me at (843) 255-2805 or [elarson@bcgov.net](mailto:elarson@bcgov.net).

Sincerely,

Eric W. Larson, PE, CPSWQ, AICP, CFM  
Stormwater Engineer  
Beaufort County Stormwater Utility

# **QUANTIFYING WATER BUDGETS IN BEAUFORT COUNTY, SC**

**BY**

**SOUTHERN WATER RESOURCES**

**A.W. BADR, PH.D.**

**VIA**

**CLEMSON UNIVERSITY**

**AGREEMENT WITH**

**BEAUFORT COUNTY ENGINEERING DIVISION**

**2014**

## INTRODUCTION

Water budgets are needed primarily to determine the volume of fresh water that is being discharged into local tidal creeks and to determine how development is affecting components of the water budget. Areas of interest include the upper reaches of the Okatie River, which is part of a watershed that is fully developed and includes the retirement community of Sun City.

To address this issue, Southern Water Resources proposed to Beaufort County a network of surface- and ground-water monitoring stations strategically located within the watershed that will quantify precipitation, runoff, and changes in ground-water and surface-water storage. This network was installed in 2011 and 2012. Evapotranspiration was also estimated using a temperature-based approach. Data collected from the monitoring network was used as the basis for developing a water budget for a watershed within the Sun City development. Southern Water Resources also assisted the Beaufort County in the analysis and interpretation of this data.

### Water Budgets

In its simplest terms, a water budget is an accounting of the volume of water entering a watershed (inputs), the volume of water leaving a watershed (outputs), and changes in the volume of water that is stored in the watershed (storage), over a fixed time interval. It is generally expressed by the equation:

$$Q_{in} - Q_{out} = \Delta S \text{ - - - - - (1)}$$

where  $Q_{in}$  is the volume of water coming into the system (watershed) per unit of time,  $Q_{out}$  is the volume of water leaving the system per unit of time, and  $\Delta S$  is the change in the volume of water in storage per unit of time. Three to four week time steps were used in the water budget analysis for this study.

Water enters a watershed primarily in the form of rainfall where it runs off to surface water bodies, evaporates and/or transpires from plants, or seeps into the ground. In this case, the water-budget equation above can be more accurately expressed as:

$$R - (Q_o + ET) = \Delta S \text{ - - - - - (2)}$$

where  $P$  is precipitation,  $Q_o$  is runoff, and  $ET$  is evapotranspiration.

The above equation can be customized depending on the objectives and scale of a project, and depending on the complexity of the system that is being studied. Other inputs, for example, may include

water that is transferred from other watersheds or pumped from confined aquifers and used for irrigation in the watershed ( $Q_{ir}$ ). The water budget equation would then be expressed as:

$$(R + Q_{ir}) - (Q_o + ET) = \Delta S \text{ ----- (3)}$$

Once calculated, a water budget is a valuable management tool that can be used to assess the availability and sustainability of water supplies within a watershed. Long-term (10 years or more) monitoring of the various components of a water budget can be used to assess the impacts that climate change and land-use modifications have on the water resources of an area.

## OBJECTIVES

Watersheds commonly have different water budgets, reflecting differences in land cover, land use, soil characteristics, precipitation, geology, topography, and drainage patterns. Development can also alter the natural flow and distribution of water in a watershed and can change a water budget. Comparisons of water budgets between undeveloped and developed watersheds can be used to draw conclusions regarding the natural effects that soil characteristics, geology, or vegetation have on the water resources of the watershed. Comparisons of water budgets from undeveloped and developed watersheds can lend insights into the effects that human activities have on the water resources of the watershed.

The purpose of this project was to develop a water budget for the Sun City community in the Okatie River area, which is located in a part of a watershed that is fully developed. Runoff coefficients, or the ratio of runoff ( $Q_o$ ) to rainfall ( $R$ ), were also computed and compared to regional runoff coefficients determined from stream gaging stations monitored by the United States Geological Survey (USGS).

Specific objectives of this study were to:

- 1) quantify the amount of rainfall falling on the watershed ( $R$ ),
- 2) quantify the amount of water imported into the watershed for irrigation purposes for both residences and golf courses ( $Q_{ir}$ ),
- 3) quantify the amount of water discharging into the Okatie River as surface-water runoff ( $Q_o$ ),
- 4) quantify the change in storage of the shallow water-table aquifer ( $\Delta S_{wt}$ ),
- 5) quantify the change in storage of the storm water ponds ( $\Delta S_{rp}$ ),
- 6) estimate the amount of water lost to the atmosphere by evapotranspiration ( $ET$ ),

7) and compare runoff coefficients for the watershed with regional runoff coefficients.

The general water budget described above can be expressed in more detail for this study as:

$$(R + Q_{ir}) - (Q_o + ET) = \Delta S_{wt} + \Delta S_{rp}. \text{-----} (4)$$

#### *Scope of Work*

Southern Water Resources was responsible for:

- 1) developing a plan to monitor the watershed with recommendations on which water budget components to monitor,
- 2) providing technical assistance on the siting of monitoring stations and the selection of appropriate equipment,
- 3) and evaluating data and developing a water budget for the watershed.

Beaufort County was responsible for:

- 1) purchasing the monitoring equipment,
- 2) installing the equipment,
- 3) maintaining the equipment,
- 4) installing monitoring wells,
- 5) collecting data from the monitoring stations,
- 6) collecting water use data for imported water and groundwater pumped from confined aquifers,
- 7) surveying elevations of monitoring wells and recorders in detention ponds,
- 8) and quality control.

Southern Water Resources' first responsibility was to develop a monitoring plan for the watershed that would focus on the principal objective of quantifying the water budget. Fiscal budget constraints, however, limited the number of sites that could be monitored and the number of wells that could be drilled. Site visits were necessary to evaluate the outfall areas, to determine where weather stations could be installed without obstructions and where monitoring wells could be drilled without interfering with other construction projects in the study area. Details of the number and locations of monitoring stations including stream gages, weather stations, pond gages, and monitoring wells are

presented in the Methods section. Monitoring wells were sited in each of the major hydrologic soil types that are represented in the watershed.

Southern Water Resources' second responsibility was to analyze the data that was collected from the various monitoring stations in order to generate the water budget for the study area. The water budget was computed for 3 to 4 week intervals and periods of analysis were limited by physical constraints at the weir outlet (see below).

## **METHODS**

Water budget components for the study watershed located at Sun City are discussed below. Inputs to the watershed include rainfall ( $R$ ) and the reuse of wastewater for irrigation purposes ( $Q_{ir}$ ). Outputs from the watershed include surface water runoff ( $Q_O$ ) and evapotranspiration ( $ET$ ). Potential Evapotranspiration ( $PET$ ) was computed to estimate the maximum amount of  $ET$  that could occur for the study watershed. Time periods for the water budget analysis were limited by periods when reliable surface runoff estimates were available (see below).

### *Rainfall ( $R$ )*

Rainfall was measured by a manual rain gage located on the Palmetto Bluff watershed. Rainfall was typically recorded on a daily basis from Monday through Friday while rainfall totals during weekends were recorded on Monday mornings. To estimate daily rainfall on the weekends, totals recorded on Monday mornings were divided equally over Friday, Saturday and Sunday. Rainfall amounts were summed over the same 3 and 4-week periods for which flow was estimated as described below and presented in units of inches. Rainfall amounts for the selected time periods are presented in Table 1.

### *Water imported to watershed for irrigation ( $Q_{ir}$ )*

Wastewater from Sun City is reused for irrigation purposes within the study watershed, and thus, is treated as an additional inflow to the watershed. Wastewater reuse was estimated by prorating Sun City's total water use based on the percentage of houses located in the study watershed and assuming that this prorated amount is entirely returned to the watershed via irrigation. Water use data, in millions of gallons per month (MGM) were obtained from the applicable BJWSA treatment facility. Eighty percent of the water from this facility is used by Sun City. Average daily water use was estimated from the monthly water use data, and then total water use was summed over the time periods discussed below for the water budget based on the daily average values. The total water use for the selected time periods was then divided by the area of the watershed to determine the water use per unit area and converted to inches.

These values, included in Table 1, represent the amount of additional water added to the watershed from the reuse of wastewater for irrigation.

### *Runoff ( $Q_o$ )*

Runoff or surface water outflow was estimated from a contracted rectangular weir located at the watershed outlet using the Francis equation (Gils, 1962). The form of the equation used computes outflow in cubic feet per second. The location of the weir is presented in Figure 1. The head or stage above the weir crest was measured with a pressure transducer at 5-minute intervals. Specifications for the weir allowed for outflow to be measured only when heads were equal to or less than 0.625 feet. During higher flow events, heads exceeded the 0.625 ft threshold at which the Francis equation is no longer valid for this weir. As a result of this limitation, outflow for high flow events could not be determined.



Figure 1. Groundwater and surface water monitoring sites on the study watershed.

Two periods of low to moderate flows were selected for analysis. The first period was from June 17, 2012 through August 4, 2012, and the second period was from September 16, 2012 through January 26, 2013. The second period included two flow events where heads above the weir crest briefly exceeded the 0.625 threshold limit and for each of these events the flow computed represents a minimum flow for

the event. Flow volumes were determined by taking the average head over each 5-minute interval and computing the resulting flow rate over the 5-minute interval using the Francis equation. Flow volumes were computed for each 5 minute interval, normalized to the drainage area of the watershed (1000 acres) to compute outflows in units of feet and then converted to inches. Outflows were then summed over 4-week intervals for the time periods described above (each of the two time periods discussed above included one 3-week interval as well). Outflows for the selected periods are presented in Table 1.

Runoff-rainfall coefficients, the ratio of outflow to rainfall ( $Q_o/R$ ), was also computed and presented in Table 1. These coefficients were compared to regional basin coefficients determined for the Salkehatchie and Coosawhatchie basins (see below) by computing percent differences in the coefficients. Ratios of runoff to the sum of rainfall and wastewater reuse ( $Q_o/(R+Q_{ir})$ ) were also computed and presented in Table 1.

#### *Potential Evapotranspiration (PET)*

Potential Evapotranspiration (PET) for the study watershed was estimated using the Hamon method (Hamon, 1963). The Hamon method utilizes average daily temperature and daylight length, which is determined from the latitude of the study site. Temperature data was taken from the Beaufort MCAS station (ID NBC), which was approximately 19 miles from the study watershed. Daily PET in inches was computed from the average daily temperature and daylight length and then summed over appropriate time periods (the same 4-week periods for which outflows were estimated) for inclusion in the water budget. PET estimates for the selected time periods are presented in Table 1. PET is the maximum amount of evapotranspiration (ET) that can occur if soil moisture conditions are not limited. During drier periods, actual ET will be less than the PET.

#### *Pond Stages*

Surface-water levels were measured at two ponds on the study watershed. The ponds are labeled SCW-1 and SCW-5 (the largest onsite pond) in Figure 1. Levels were measured on an hourly basis with an unvented pressure transducer. The unvented transducer measured total pressure in feet of water and the hourly readings were compensated by using an onsite barometric sensor to remove the effects of barometric pressure. After compensation, water levels were converted to elevations in feet above sea level.

#### *Groundwater Levels*

Groundwater levels were measured at three sites on the study watershed. These sites are labeled as SCW-2, SCW-3 and SCW-4 in Figure 1. Levels were measured on an hourly basis with a vented pressure transducer. The unvented transducer measured total pressure in feet of water and the hourly readings were compensated by using an onsite barometric sensor to remove the effects of barometric pressure. After compensation, groundwater levels were converted to elevations in feet above sea level.

Each monitoring station in the study was surveyed to determine its latitude and longitude coordinates using the North American Datum of 1983 (NAD83) as the horizontal control datum, and leveled to determine its elevation above mean sea level using the North American Vertical Datum of 1988 (NAVD88) as the vertical control datum. All of the measurements made during the course of the study were referenced to a common datum allowing for computations of horizontal and vertical hydraulic gradients and other parameters.

#### *Runoff coefficients for regional, unregulated watershed*

The undeveloped, Palmetto Bluff watershed was originally included in the scope of this project. The runoff from that watershed was to be used for a comparison against the developed, Sun City watershed. The data collected from the Palmetto Bluff watershed shows that infiltrating rainfall moves downward into the deep sand layers of the watershed, and very little, if any, moves out of the watershed as runoff. The South Carolina Department of Natural Resources (DNR) recently made a geologic map of the Pritchardville quadrangle in Beaufort and Jasper counties. This geologic map shows an abundance of sand deposits and silted streams in the area of the Palmetto Bluff watershed. All collected data from the Palmetto Bluff watershed are given in Appendix B.

Two alternative watersheds were used for the comparison against the Sun City watershed. The selected watersheds are similar to the Okatie watershed where they are subject to tides and weather patterns (Figure 2). USGS data from the Coosawhatchie River near Hampton (02176500) gage was selected because the flow is unregulated and the hydrologic unit is the same as the Okatie River unit near Bluffton (03050208). Flow data has been collected at this site since 1951. The drainage area at this station is 203 square miles and has an average annual runoff of 10.6 in. The second selected site of unregulated flow is the Salkehatchie River near Miley (02175500) gage where the flow has been measured since 1951. The drainage area of this site is 341 square miles and has an average annual runoff of 12.8 in. The hydrologic unit of this site is 03050207 and is adjacent to the 03050208 hydrological unit. Average rainfall in the Salkehatchie and Coosawhatchie basins is approximately 48 in based on the review of several rainfall gaging stations located in these basins. Average runoff coefficients for the

Coosawhatchie and Salkehatchie basins for the period 1951 – 2012 are 0.22 and 0.26, respectively. The coefficient that was used in this study was an average of the two watersheds (0.24).

The state average runoff-rainfall coefficient was established from the State water budget (Figure 3) discussed in the State Water Plan. The state average coefficient is:

$$(21 \text{ in} - 8 \text{ in})/48 \text{ in} = 0.27.$$

The average is higher in the Upstate and Piedmont region because of the bedrocks and lack of coastal, shallow soil aquifers. The average is lower in the Coastal area because of the presence of the shallow soil aquifer system and the high storage ability in the soil profile.

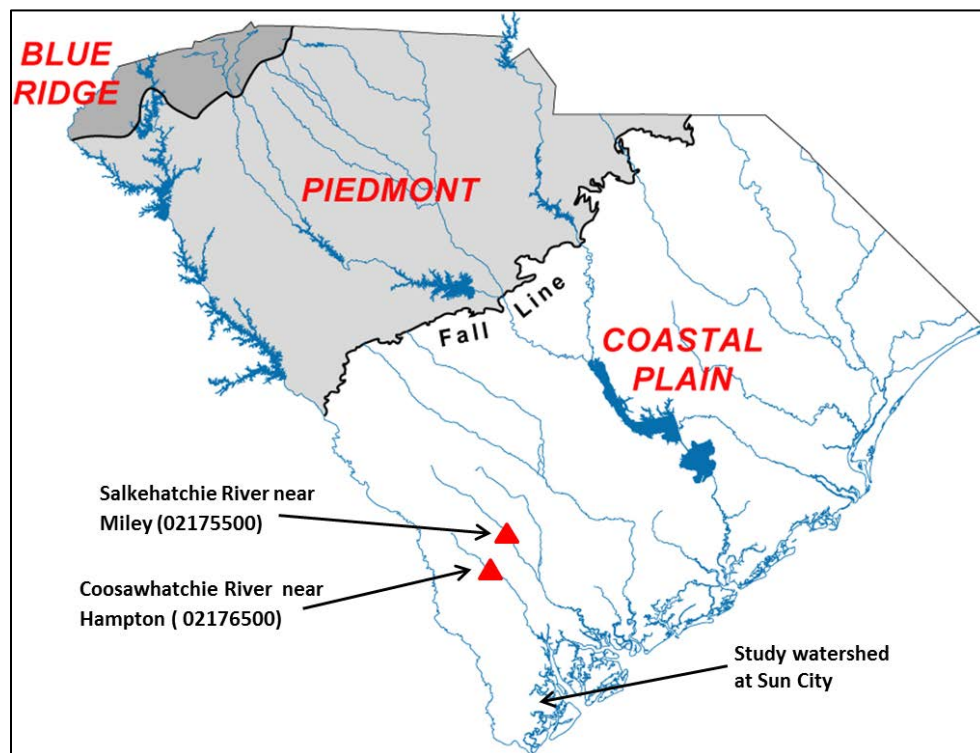


Figure 2. Location of unregulated gaging sites used to compute regional runoff-rainfall coefficients.

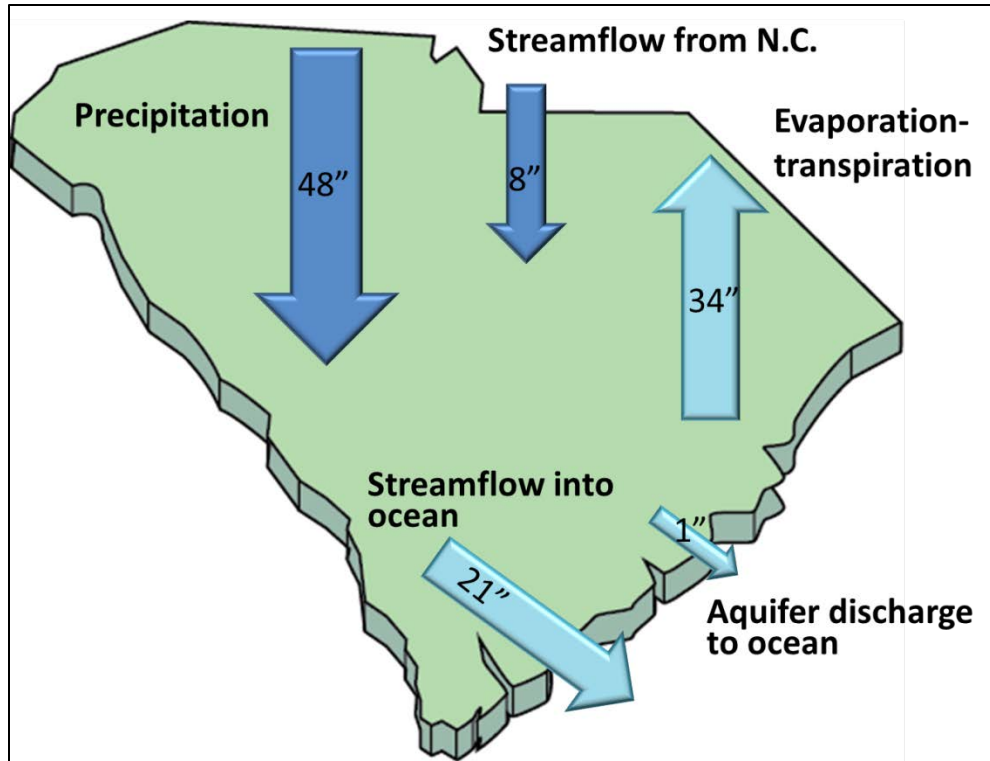


Figure 3. South Carolina's water budget.

## DISCUSSION

### *Water Budget Results*

Precipitation and runoff are major components of the water budget in the study area. Therefore, it is critical that these two parameters be measured as accurately as possible using the best instrumentation available. Evapotranspiration is also a significant component of the water budget. Actual evapotranspiration will vary depending upon temperature and other meteorological variables. If an evaporation pan can be properly maintained or if an automated evaporation pan can be installed, it would greatly benefit any future studies on the watershed. For this study, potential evapotranspiration (PET) was used as a surrogate for actual evapotranspiration (ET).

Pond 5(SCW-5) is the largest pond in the Sun City development. While groundwater levels fluctuate due to rainfall and location, it is assumed that the groundwater levels in the watershed and SCW-5's surface water elevations are trying to reach equilibrium at all times. Therefore, SCW-5 water levels were used to approximate the change in storage on the watershed.

Equation (3) was used to calculate the change of storage for each time unit in Table 1. For example, the total change in storage for the second period was:

$$(P + Q_{ir}) - (Q_o + ET) = (5.17 + 1.02) - (2.28 + 10.92) = -7.0 \text{ in.}$$

The measured change in storage was -7.7 in. Therefore, the percent error is:

$$[(7.7 - 7.0) / 7.7] \times 100\% = 9.2\%$$

The water budget results for the period from September 2012 through January 2013 in Table 1 gives a calculated change in storage within 10% of the observed changes in storage at pond SCW-5. However, measurement errors of runoff can be up to  $\pm 15\%$  for USGS streamflow gaging stations and compounded errors in the water budget can rise up to  $\pm 45\%$  according to the USGS.

The runoff-rainfall coefficients were calculated and included in Table 1 for each period. A coefficient was also calculated by dividing the runoff by the sum of the rainfall and additional water added to the system. The totals for the second period of analysis shows a significant increase in runoff where the coefficient measured in the Sun City watershed was more than 50% greater than the average annual runoff coefficient determined from the Coosawhatchie and Salkehatchie river basins.

#### *Groundwater Well Data and Pond Stage Data Review*

The observed water levels in groundwater wells and ponds are given the Figures 4 – 8 along with daily rainfall measured for the study period. Overall, water levels in the ponds and the wells were at their highest during August of 2012 when total monthly rainfall exceeded 13 inches and in February 2013, when monthly rainfall totals were approximately 9.5 inches. Levels were generally at their lowest during July 2012 owing to lack of rainfall and increased ET rates; however, SCW-3, SCW-4 and SCW-5 also experienced low level conditions in the fall of 2012.

Surface water levels in pond SCW-1 responded rapidly to rainfall events and increased as much as 2.5 ft during a large event in August 2012 (Figure 4). Levels in the pond also returned rapidly to pre-event levels. Levels in the pond typically showed little to no variation between rainfall events.



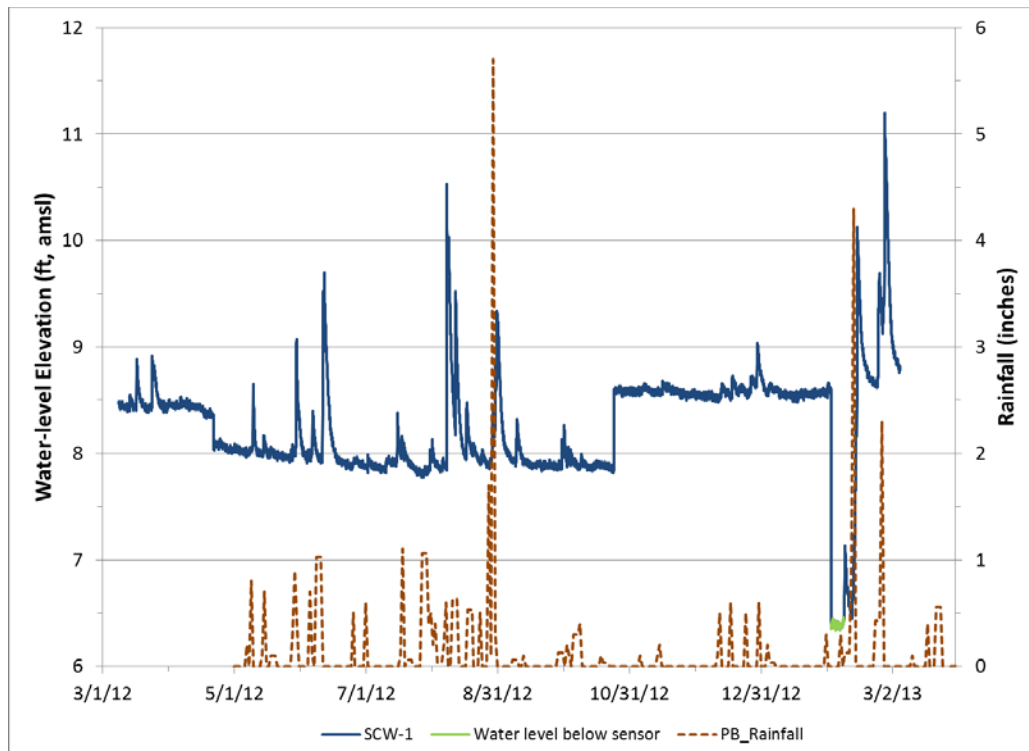


Figure 4. Water-level elevations for Pond 1 (SCW-1).

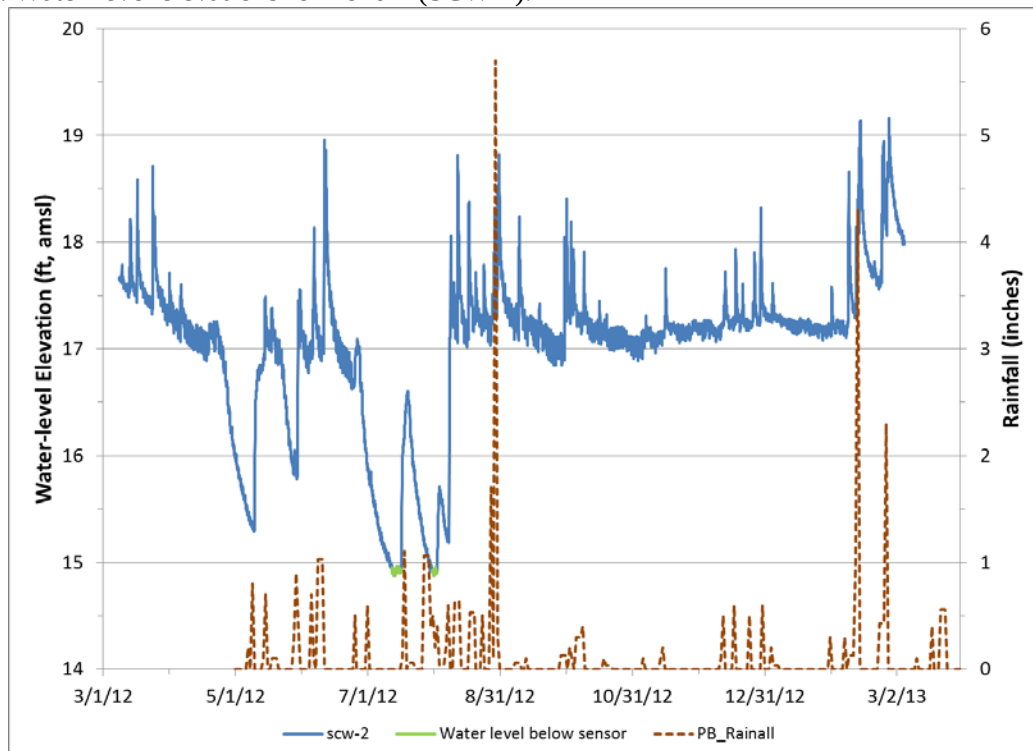


Figure 5. Groundwater-level elevations for SCW-2.

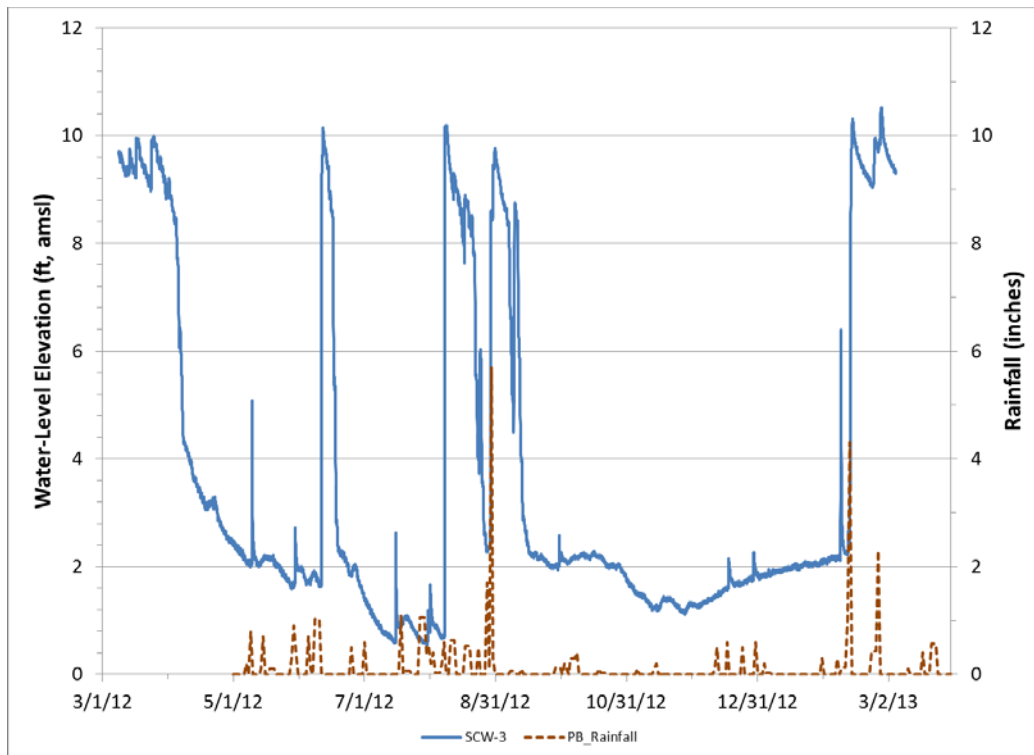


Figure 6. Groundwater-level elevations for SCW-3.

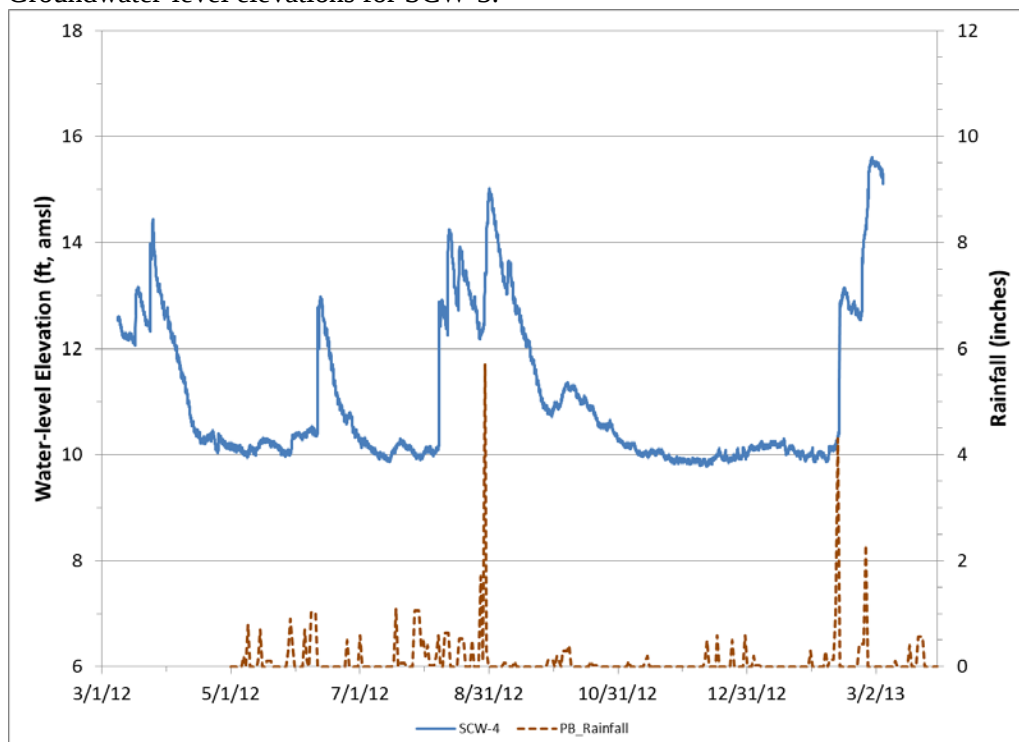


Figure 7. Groundwater-level elevations for SCW-4.

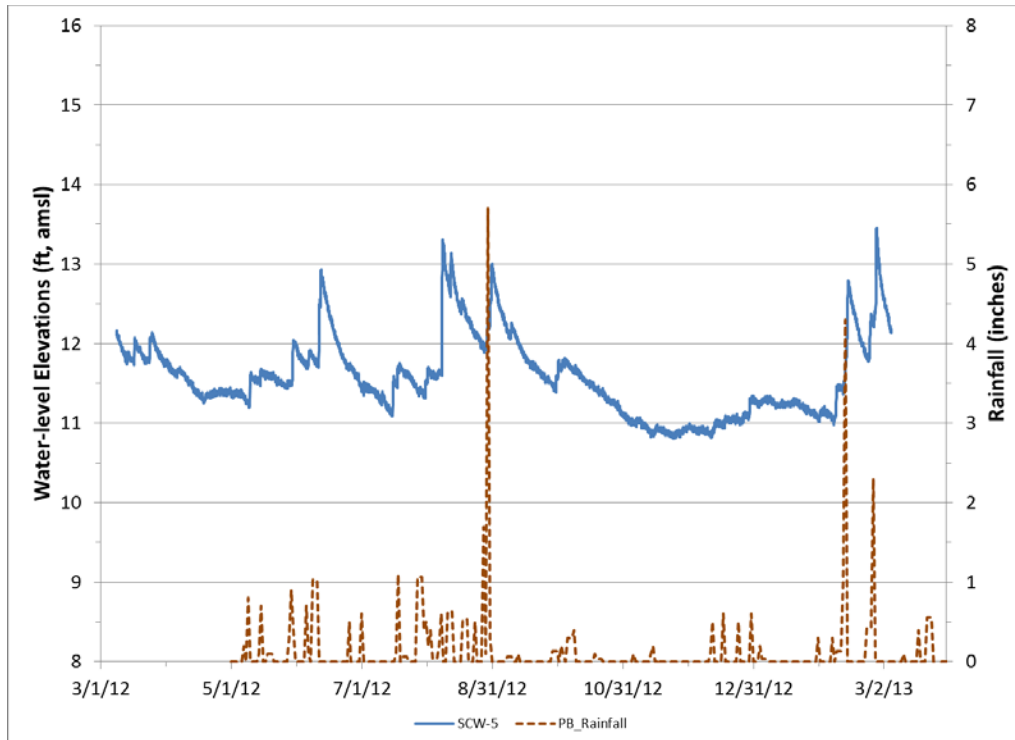


Figure 8. Water-level elevations for Pond 5 (SCW-5).

## RECOMMENDATIONS

Data analysis on the Sun City watershed and the Coosawatchie and Salkewhatchie basins indicates an increase of more than 50 percent in the volume of water entering the headwaters of the May River as a result of land development.

Irrigated water added to the watershed was more than 20% of the natural rainfall during the monitoring period. The amount of available storage in the soil matrix was reduced due to the rising of the water table and the higher pond levels. Both the additional water and the higher water tables have increased the volumes and peak flows of runoff.

Surface runoff was not measured during high to very high rainfall events due to the physical limitation of the weir. Such volumes should be measured in future studies to quantify flows into the headwaters of the May River during these events.

Longer monitoring periods as well as additional monitoring stations are needed to measure more accurate runoff and rainfall during flood and drought events.

There was little to no stress on water availability in the developed area during the study period. During drier periods, the runoff was significantly less and the evapotranspiration was high, but stored water in the ponds was used to supplement the available effluent for golf course irrigation. Groundwater was available via two groundwater wells in the developed area; however, groundwater was not used during this monitoring period for irrigation.

To control the developed watershed's runoff and mimic the natural runoff, the following can be applied:

#### *Aquifer Storage and recovery (ASR)*

Aquifer storage and recovery (ASR) systems involve the injection and storage of potable water into an aquifer and the recovery of this water at a later time, usually to supplement water supplies. Most ASR projects in South Carolina are employed in coastal areas to meet high seasonal demands and to provide emergency supplies as needed. Treated surface water is injected into an aquifer during the off-peak season when demands are low and later recovered by pumping the treated water out of the aquifer to meet peak seasonal demands. Water injected into the aquifer must meet state and federal water-quality standards and ASR wells must be permitted by the S.C. Department of Health and Environmental Control (DHEC) in accordance with the S.C. Underground Injection Control Regulation (R. 61-87).

Currently four water suppliers operate ASR systems in the State: Grand Stand Water and Sewer Authority in Horry County; Mount Pleasant Waterworks in Charleston County; Kiawah Island Utility, Inc. in Charleston County; and Beaufort-Jasper Water and Sewer Authority in Beaufort and Jasper Counties.

The Orangeburg Department of Public Utilities, which uses the North Fork Edisto River as its drinking-water source, is in the process of installing two ASR wells, one in the Black Creek aquifer and the other in the Middendorf aquifer. The primary reason for developing this ASR system is not to have additional capacity during droughts when stream flows are low, but to improve the efficiency of their water treatment operations. During periods of low stream flow, when treatment of water from the North Fork Edisto is least expensive, treated water will be injected into the aquifers; during periods of high stream flow, when treatment of surface water is more expensive, the already-treated water stored underground will be recovered and made available for use with minimal additional treatment.

This suggested application of ASR is very unique in that extra runoff during normal and high flow periods will be harvested, treated and injected in a deep aquifer at the development site. The injection well will be used to supplement water supply demands during water shortages and drought

periods. Adding water to the deep aquifers in the Coastal area can significantly help control salt water intrusion into the State's aquifers. State environmental agencies like DNR and DHEC as well as local governments should have a special interest in this application.

#### *Normal Storm Water Management*

Storm water ponds should be kept drained at all times to receive the extra runoff during normal and high flow periods. The stored water should be released slowly as non-flood flows downstream. This application controls the peak of the flow downstream and does not reduce the volume of extra runoff.

#### **REFERENCES**

Badr, A.W., Wachob A., and Gellici, J.A., 2004, South Carolina Water Plan - Second Edition.

Gils, Ranald V., 1962 *Fluid Mechanics and Hydraulics*, Schaum McGraw-Hill, page 135.

Hamon, W.R., 1963. Computation of Direct Runoff Amounts From Storm Rainfall. Int. Assoc. Sci. Hydrol. Pub. 63:52-62.

## **APPENDIX A**

### **Weekly Change in Water Levels for Groundwater Wells and Ponds in the Sun City Watershed**

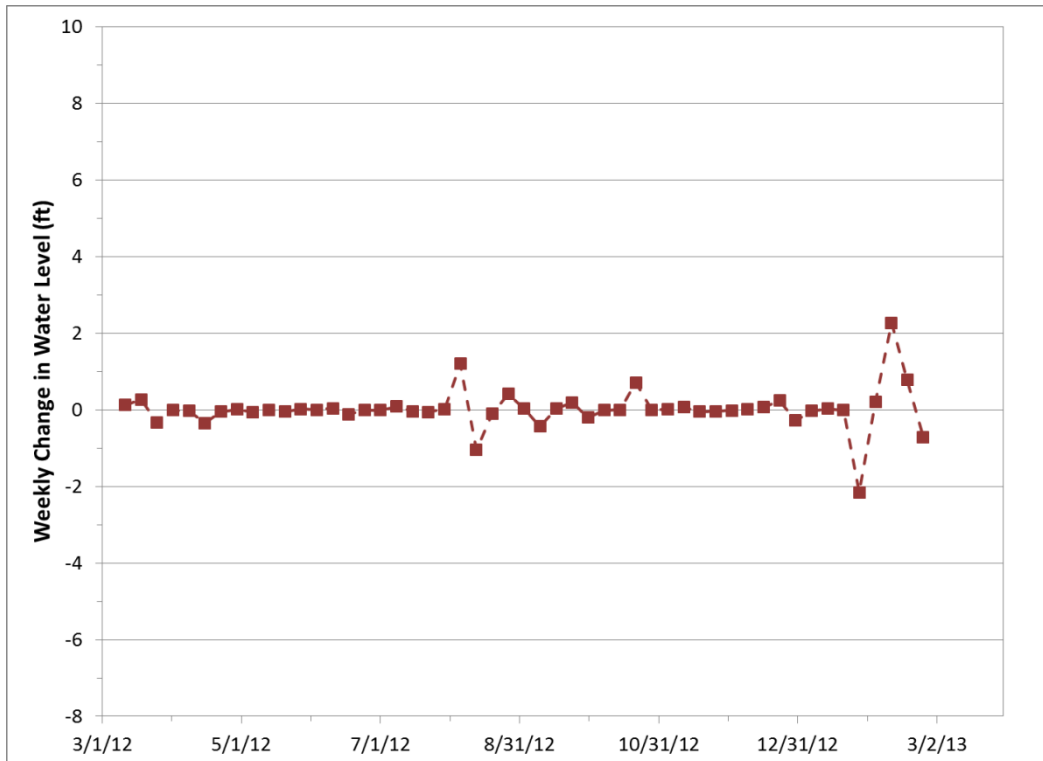


Figure 9. Weekly changes in water level at SCW-1.

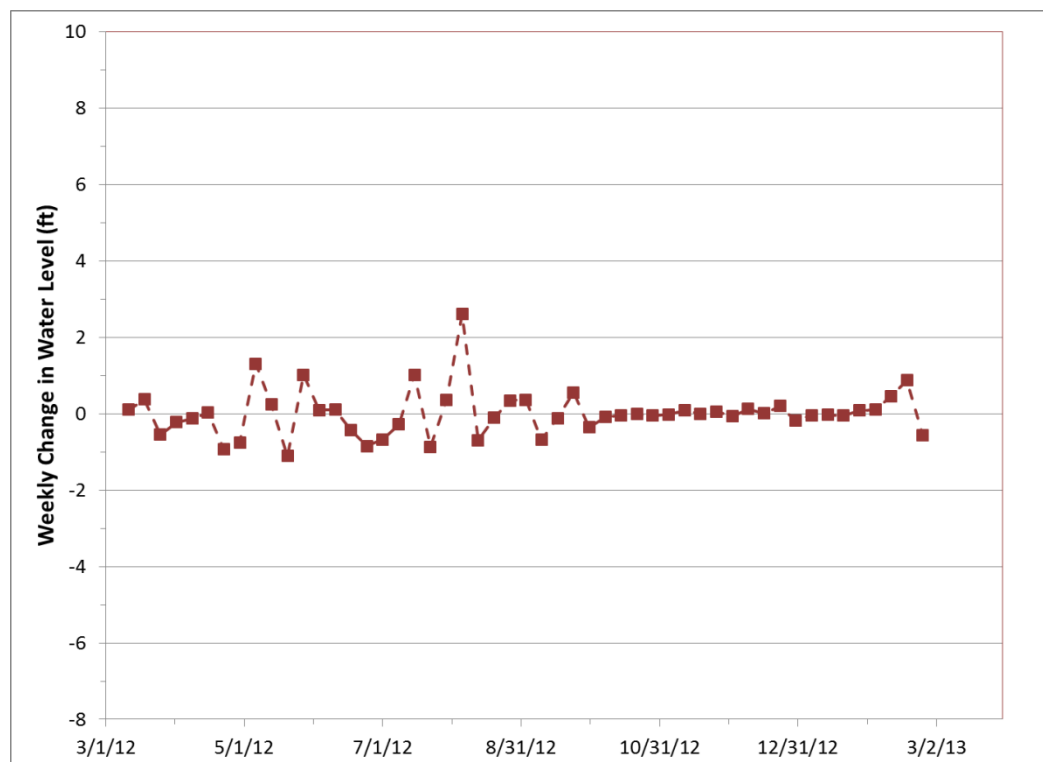


Figure 10. Weekly changes in water level at SCW-2.

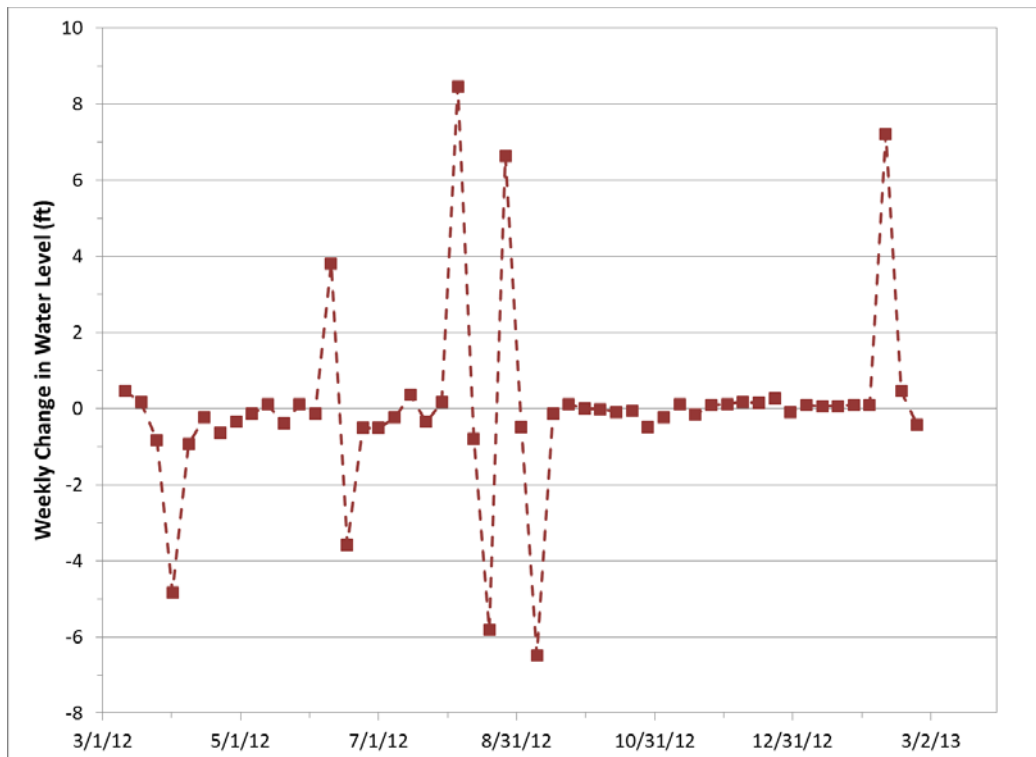


Figure 11. Weekly changes in water level at SCW-3.

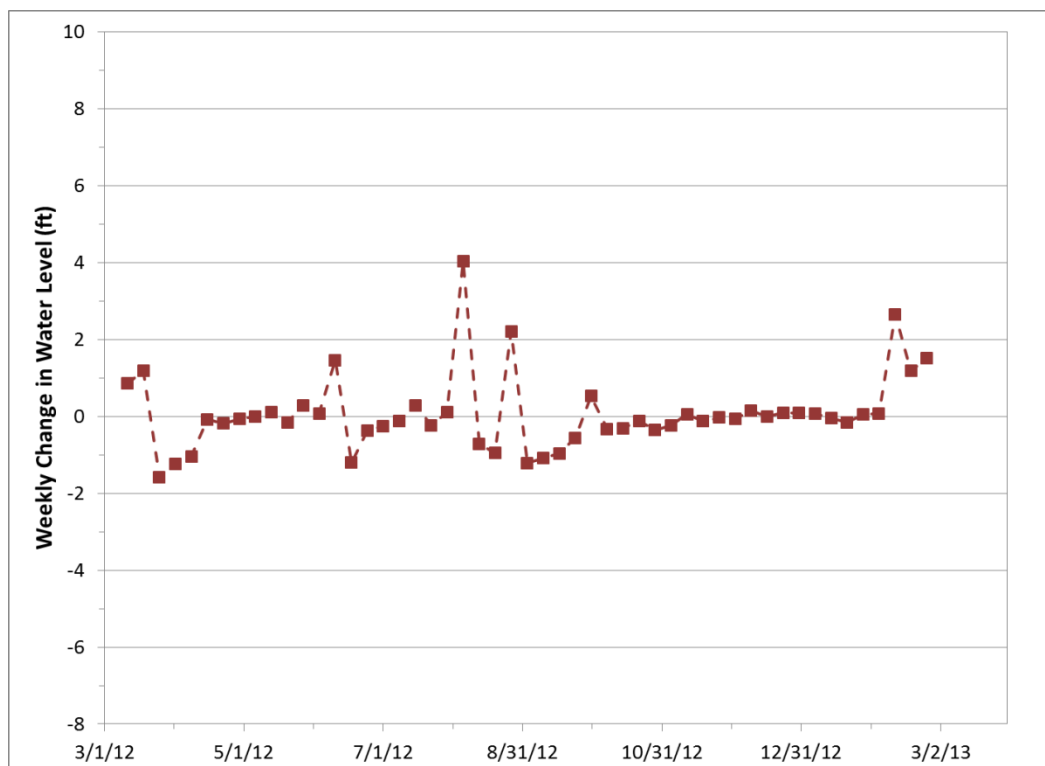


Figure 12. Weekly changes in water level at SCW-4.

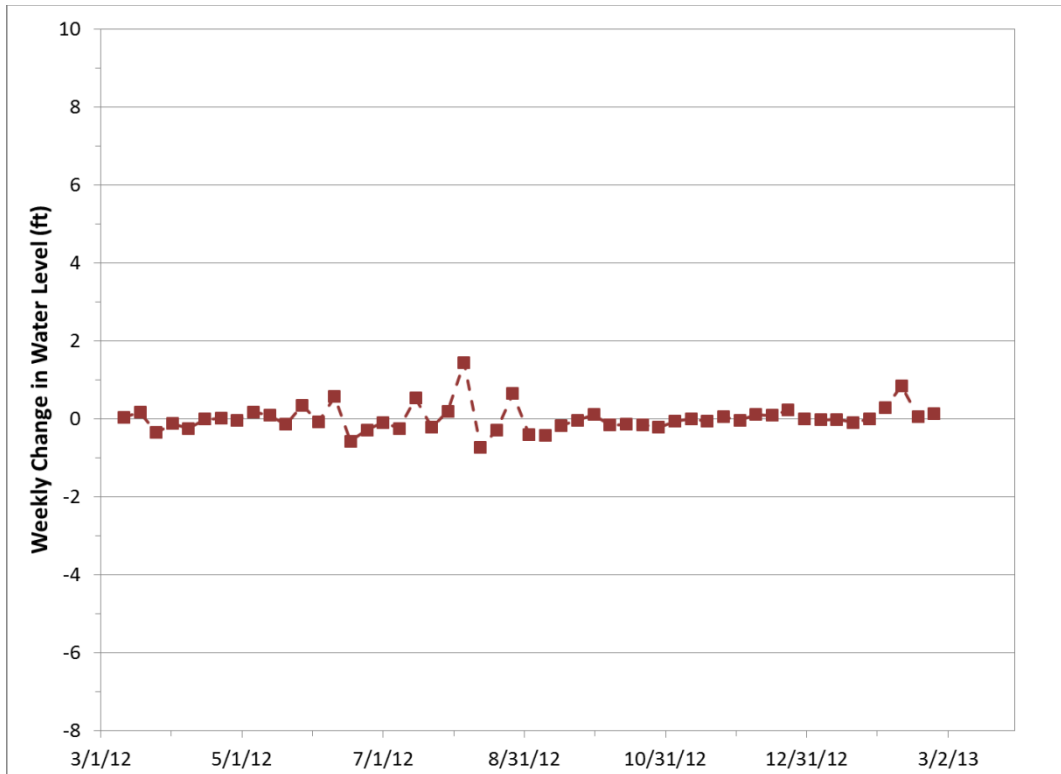


Figure 13. Weekly changes in water level at SCW-5.

## APPENDIX B

### Outlet Stage and Groundwater-level Elevations in the Palmetto Bluff Watershed

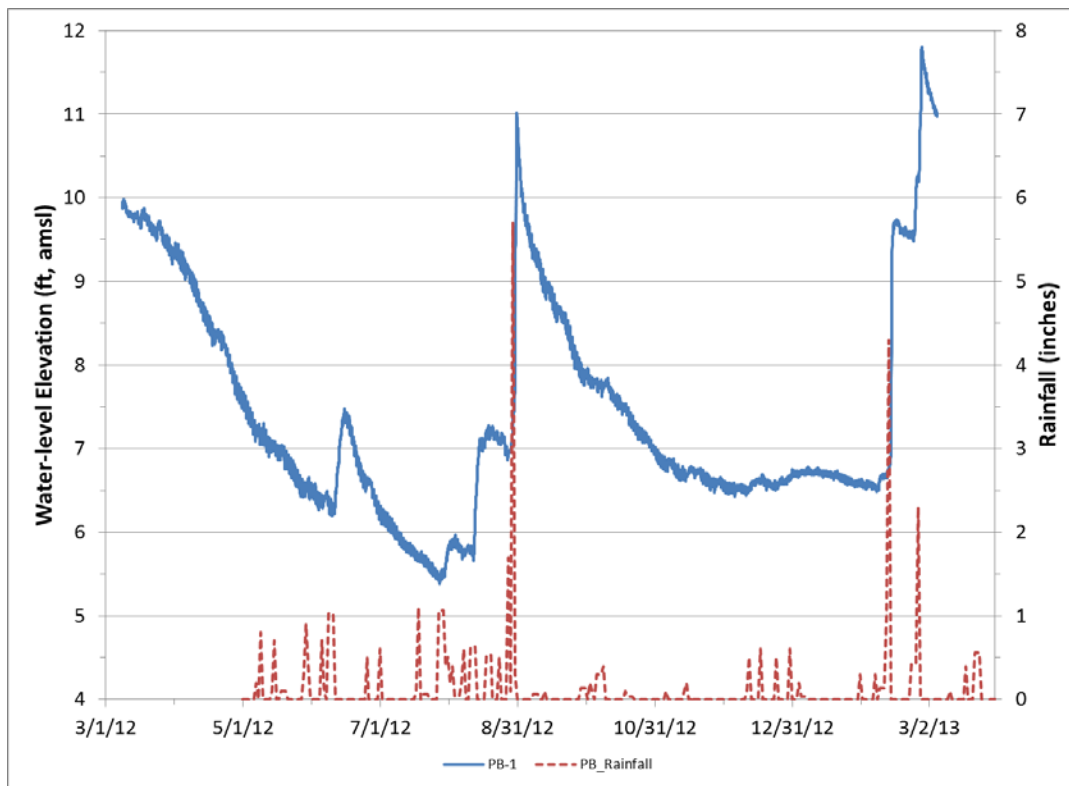


Figure 14. Groundwater-level elevations at PB-1.

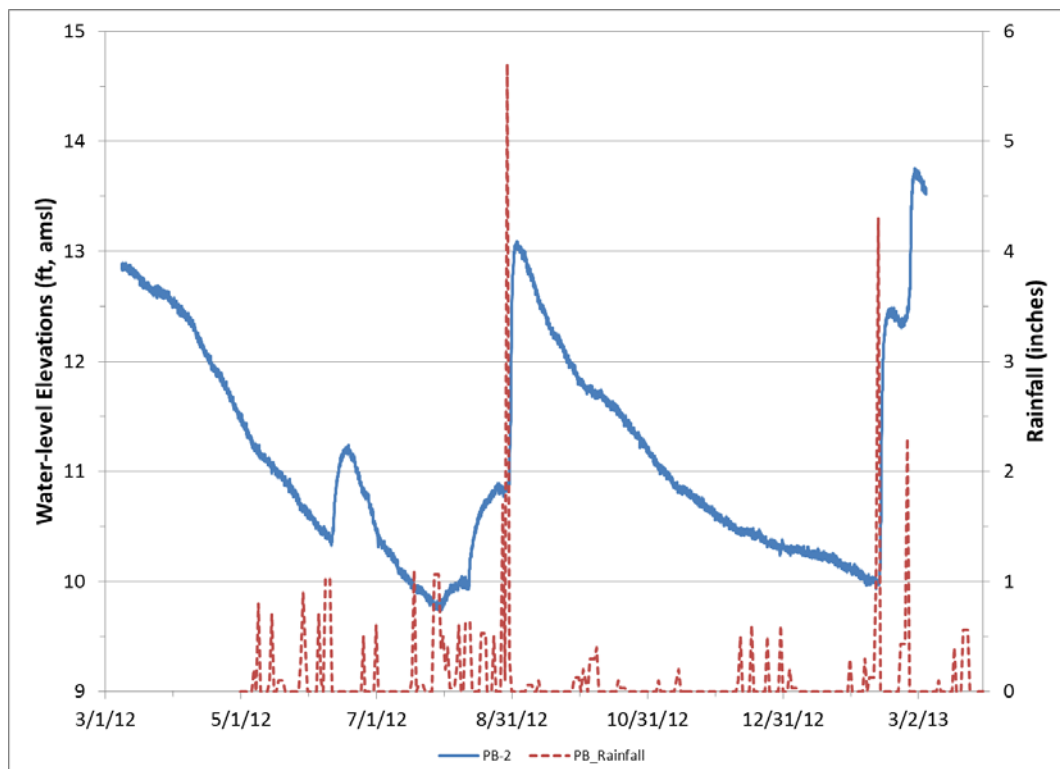


Figure 15. Groundwater-level elevations at PB-2.

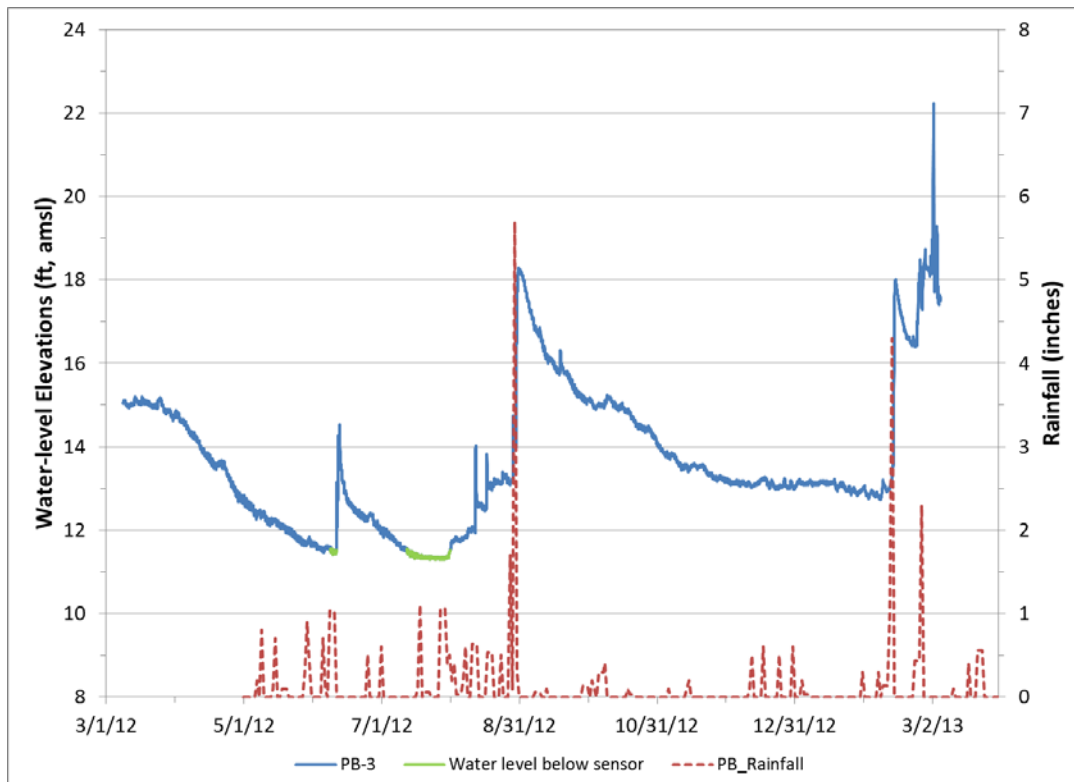


Figure 16. Groundwater-level elevations at PB-3.

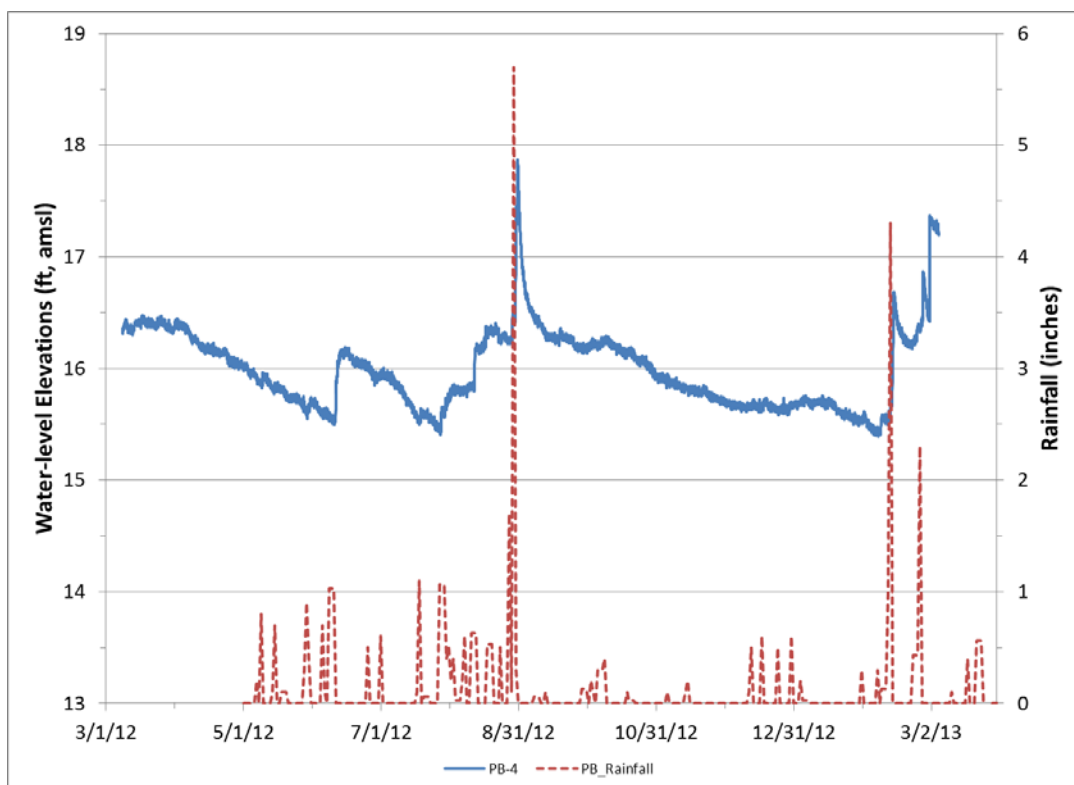


Figure 17. Groundwater-level elevations at PB-4.

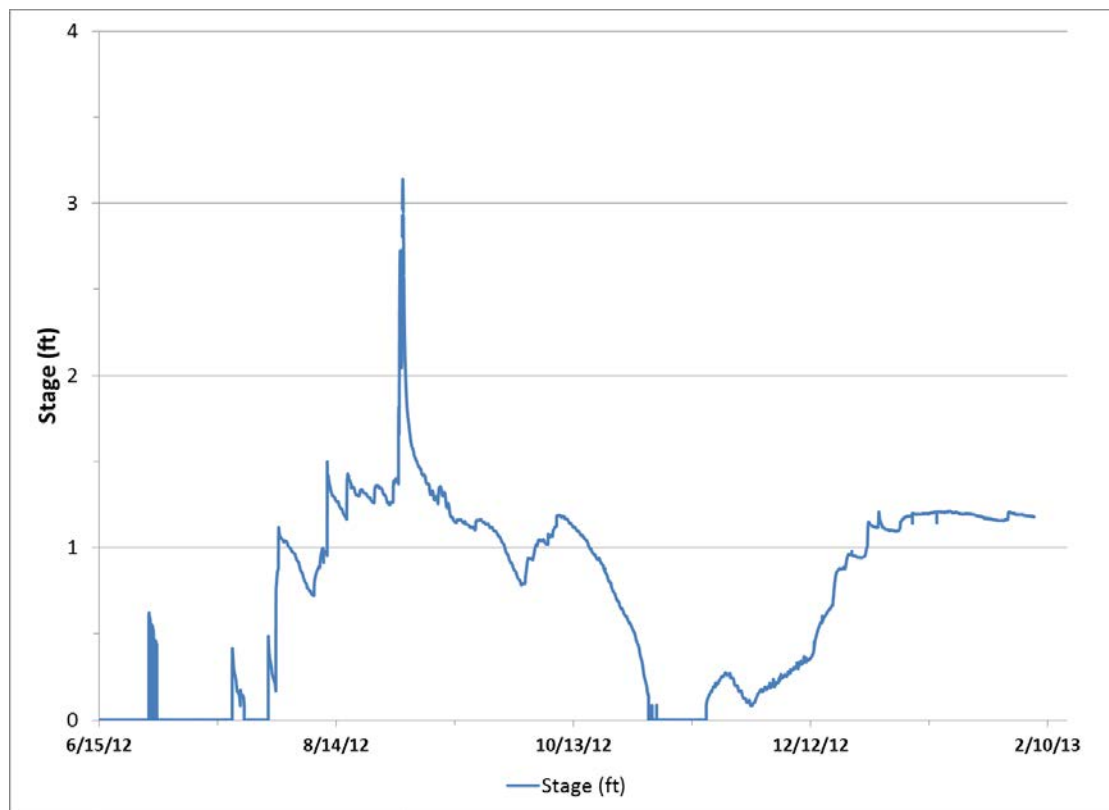


Figure 18. Outlet stage at the Palmetto Bluff watershed.

# QUANTIFYING WATER BUDGETS IN BEAUFORT COUNTY, SC

BY: A.W. BADR, PH.D  
SOUTHERN WATER RESOURCES, LLC

# INTRODUCTION

- Why?
- Objectives
- Scope of Work
- Results
- Conclusions

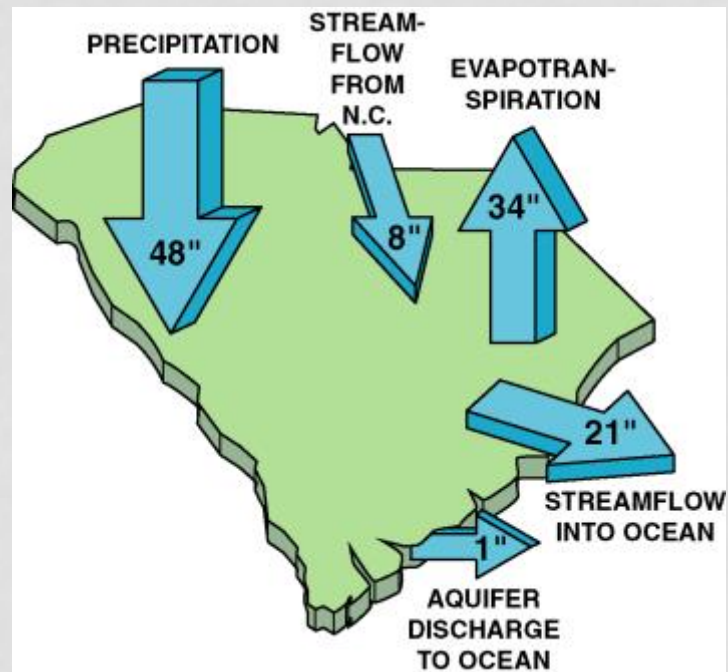
# OBJECTIVES

- Quantify the amount of rainfall falling on the watershed.
- Quantify the amount of water imported into the watershed for irrigation purposes for both residences and golf courses.
- Quantify the amount of water discharging into the Okatie River as surface-water runoff.
- Quantify the change in storage of the shallow water-table aquifer.

# OBJECTIVES (CONT.)

- Quantify the change in storage of the storm water ponds.
- Estimate the amount of water lost to the atmosphere by evapotranspiration.
- Compare runoff coefficients for the watershed with regional runoff coefficients.

# SOUTH CAROLINA'S WATER BUDGET



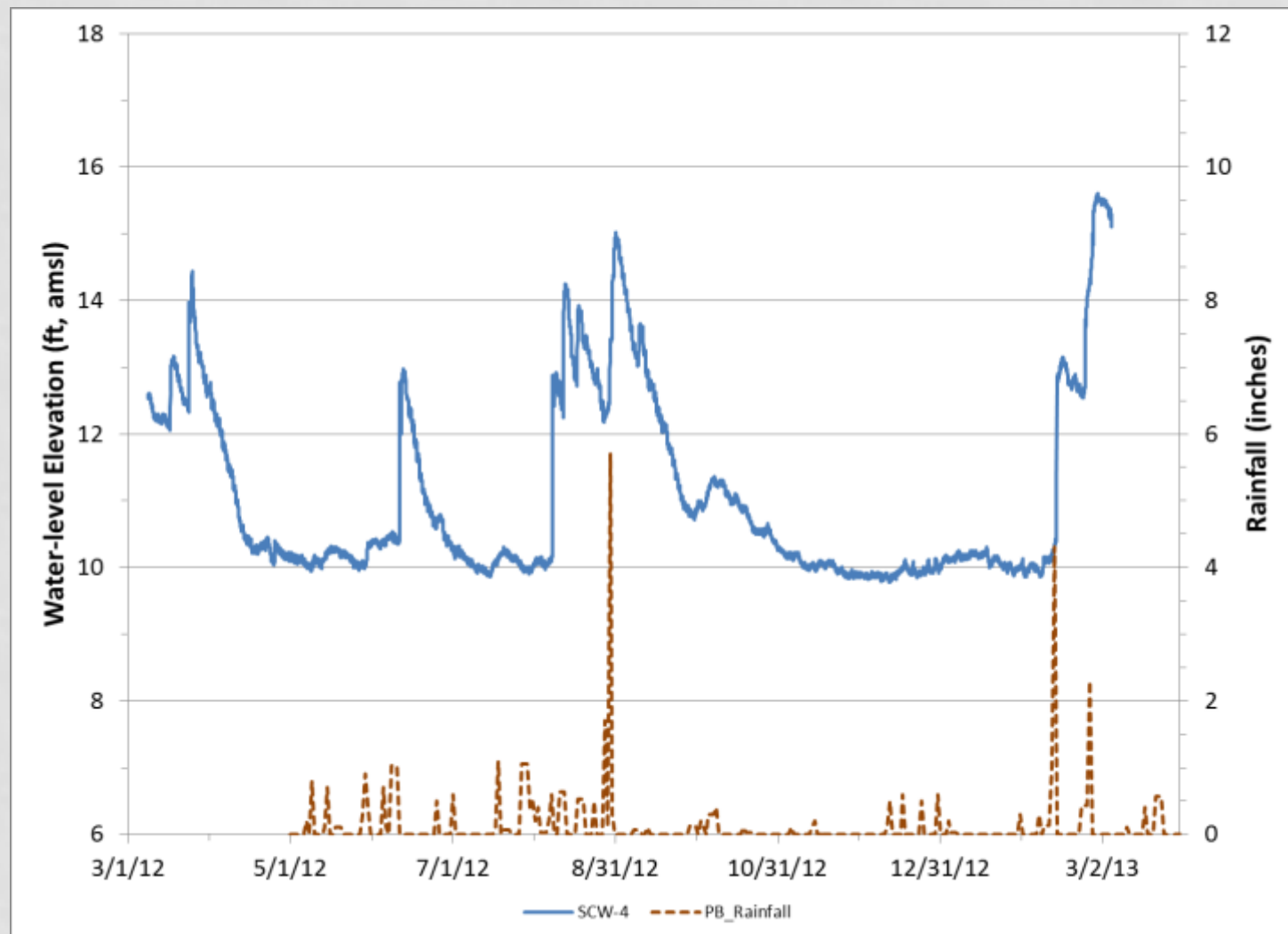
# SCOPE OF WORK

- Developing a plan to monitor the watershed with recommendations on which water budget components to monitor.
- Providing technical assistance on the siting of monitoring stations and the selection of appropriate equipment.
- Evaluating data and developing a water budget for the watershed.

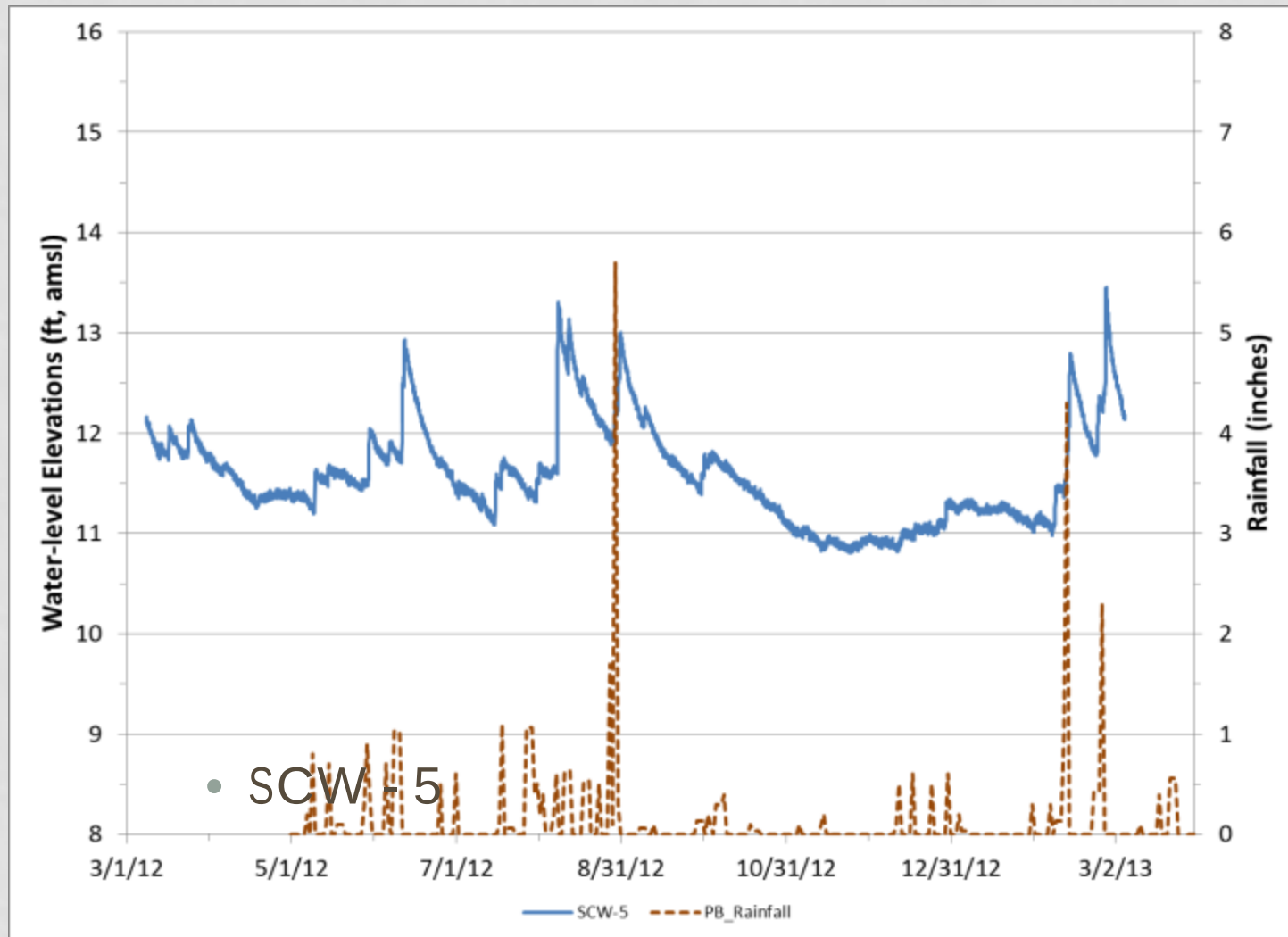
# GROUNDWATER & SURFACE WATER MONITORING SITES ON THE STUDY WATERSHED.



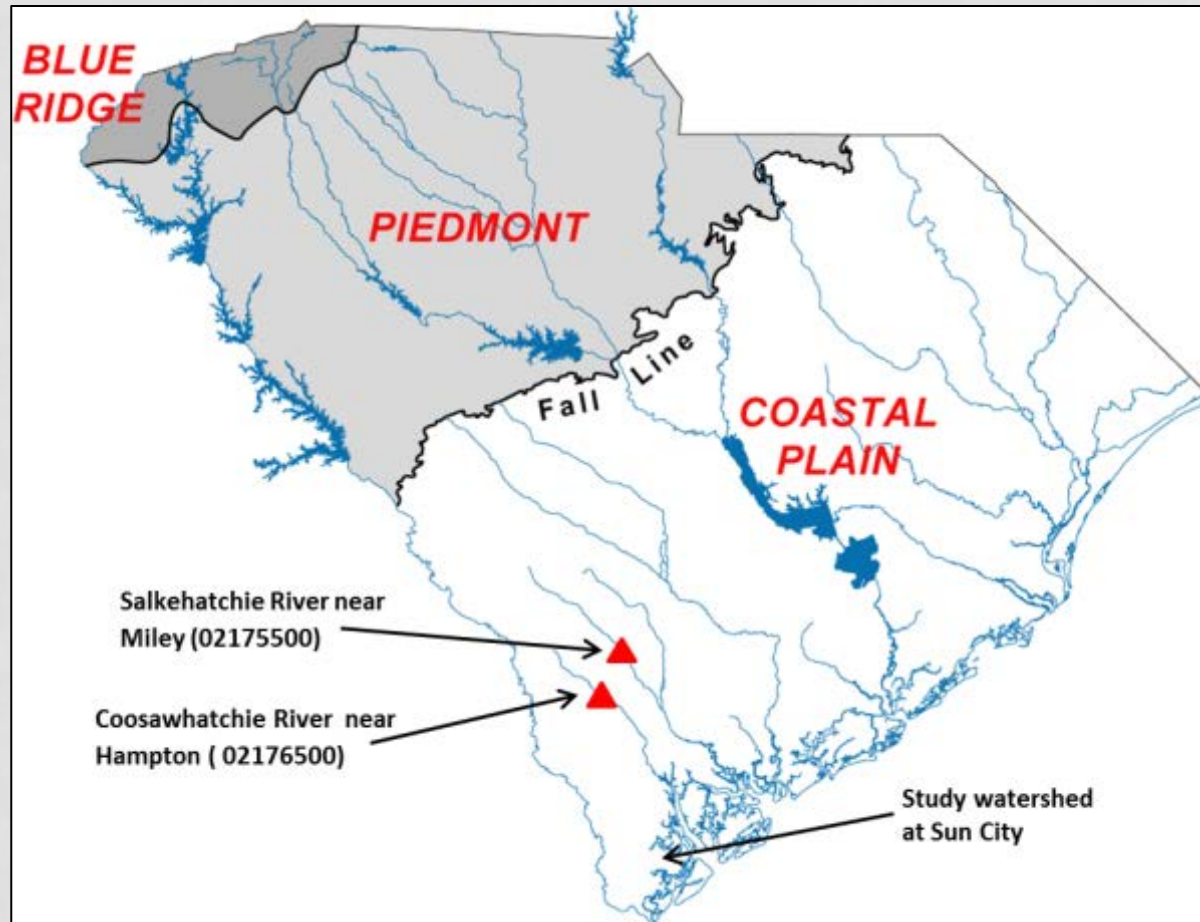
# GROUNDWATER-LEVEL ELEVATIONS FOR SCW-4



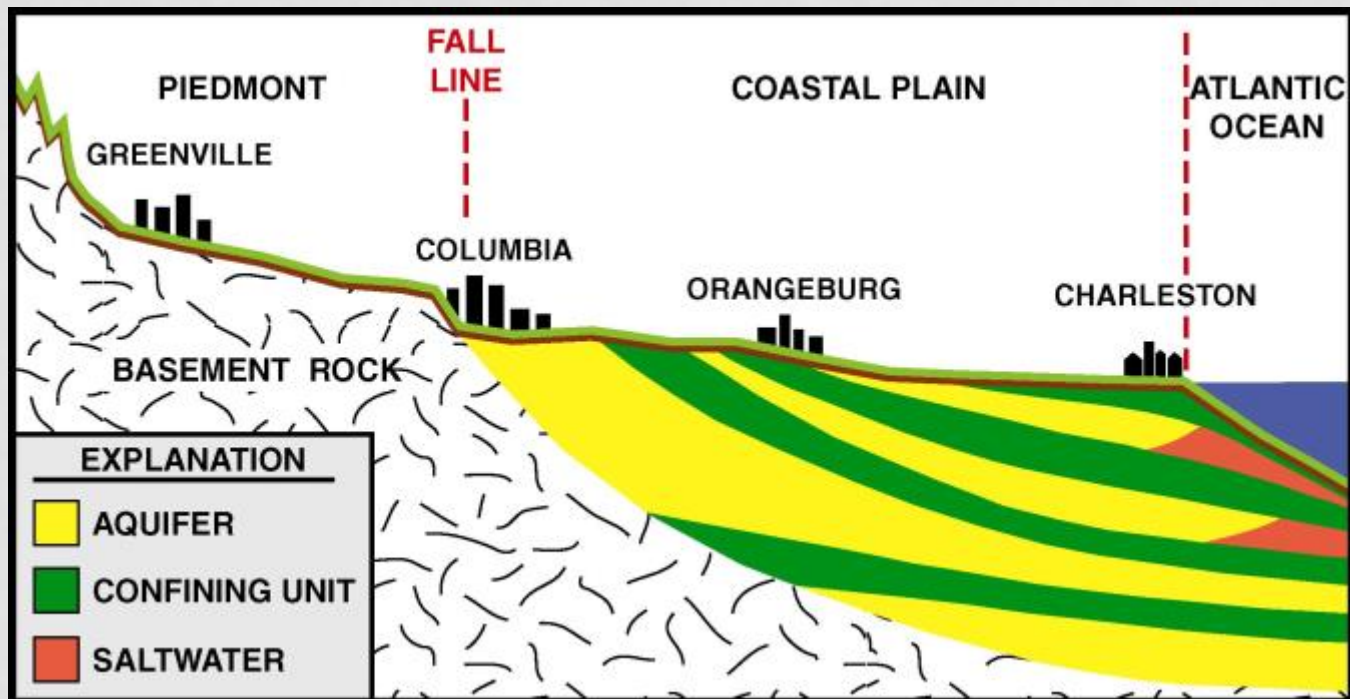
# WATER-LEVEL ELEVATIONS FOR POND 5 (SCW-5)



# LOCATION OF UNREGULATED GAGING SITES USED TO COMPUTE REGIONAL RUNOFF-RAINFALL COEFFICIENTS.



# THE STATE'S AQUIFER SYSTEM



THANK YOU

QUESTIONS?

**UNAUDITED AND PRELIMINARY**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF NET ASSETS**  
Stormwater Utility and Capital Improvement Funds  
April 30, 2014 & April 30, 2013

|                                                    | Stormwater Utility<br>Fund<br>April 30, 2014 | Capital Improvement<br>Fund<br>April 30, 2014 | Stormwater Utility<br>Fund<br>April 30, 2013 |
|----------------------------------------------------|----------------------------------------------|-----------------------------------------------|----------------------------------------------|
| <b><u>ASSETS</u></b>                               |                                              |                                               |                                              |
| Current Assets                                     |                                              |                                               |                                              |
| Cash and Investments with Trustee                  | \$ 2,395,506                                 | 811,313                                       | \$ 3,037,509                                 |
| Receivables, Net                                   | 109,334                                      | -                                             | 2,334                                        |
| Inventories                                        | 92,511                                       | -                                             | 102,941                                      |
| Total Current Assets                               | <u>2,597,351</u>                             | <u>811,313</u>                                | <u>3,157,077</u>                             |
| Capital Assets                                     | 2,976,411                                    | -                                             | 2,841,893                                    |
| Accumulated Depreciation                           | <u>(2,142,794)</u>                           | <u>-</u>                                      | <u>(2,068,828)</u>                           |
|                                                    | 833,617                                      | -                                             | 773,065                                      |
| Total Assets                                       | \$ 3,430,968                                 | 811,313                                       | \$ 3,930,142                                 |
| <b><u>LIABILITIES</u></b>                          |                                              |                                               |                                              |
| Liabilities                                        |                                              |                                               |                                              |
| Account Payable                                    | 225,680                                      | -                                             | 57,400                                       |
| Accrued Payroll                                    | 46,883                                       | -                                             | 69,791                                       |
| Accrued Compensated Absences                       | 6,247                                        | -                                             | 4,470                                        |
| Total Current Liabilities                          | <u>278,810</u>                               | <u>-</u>                                      | <u>131,661</u>                               |
| Long Term Liabilities                              |                                              |                                               |                                              |
| Accrued Compensated Absences                       | 55,379                                       | -                                             | 64,937                                       |
| Net Other Postemployment<br>Benefits Obligation    | <u>831,027</u>                               | <u>-</u>                                      | <u>690,547</u>                               |
| Total Long Term Liabilities                        | 886,406                                      | -                                             | 755,484                                      |
| Total Liabilities                                  | 1,165,216                                    | -                                             | 887,145                                      |
| <b><u>NET ASSETS</u></b>                           |                                              |                                               |                                              |
| Invested in Capital Assets, Net<br>of Related Debt | 833,617                                      | -                                             | 773,065                                      |
| Reserved for Encumbrances                          | 130,455                                      | -                                             | 323,002                                      |
| Reserved for Capital Improvement                   | -                                            | 811,313                                       | -                                            |
| Unrestricted                                       | <u>1,301,680</u>                             | <u>-</u>                                      | <u>1,946,930</u>                             |
| Total Net Assets                                   | <u>\$ 2,265,752</u>                          | <u>\$ 811,313</u>                             | <u>\$ 3,042,997</u>                          |

**Unaudited and Preliminary**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**  
**Stormwater Utility Fund**  
**For the Period Ended April 30, 2014**

|                                           | Budget<br>FY 2014   | April 30, 2014      | Budget to<br>Actual | Percent<br>of<br>Budget |
|-------------------------------------------|---------------------|---------------------|---------------------|-------------------------|
| Operating Revenues                        |                     |                     |                     |                         |
| Stormwater Utility Fees                   | \$ 3,475,000        | \$ 2,928,439        | (546,561)           | 84%                     |
| Stormwater Utility Project Billings       | 60,023              | 110,272             | 50,249              | 184%                    |
| Total Operating Revenues                  | <u>3,535,023</u>    | <u>3,038,711</u>    | <u>(496,312)</u>    | <u>86%</u>              |
| Operating Expenses                        |                     |                     |                     |                         |
| Personnel                                 | 2,160,475           | 1,586,099           | (574,376)           | 73%                     |
| Purchased Services                        | 961,864             | 476,399             | (485,465)           | 50%                     |
| Supplies                                  | 381,446             | 260,533             | (120,913)           | 68%                     |
| Depreciation                              | 242,119             | 201,770             | (40,349)            | 83%                     |
| Total Operating Expenses                  | <u>3,745,904</u>    | <u>2,524,801</u>    | <u>(1,221,103)</u>  | <u>67%</u>              |
| Operating Income (Loss)                   | (210,881)           | 513,910             | 724,791             | -244%                   |
| Non-Operating Revenues (Expenses)         |                     |                     |                     |                         |
| Gain (Loss) on Sale of Capital Assets     | -                   | (31,113)            | (31,113)            | -100%                   |
| Interest Earned                           | 6,922               | -                   | (6,922)             | 0%                      |
| Total Non-Operating Revenues (Expenses)   | <u>6,922</u>        | <u>(31,113)</u>     | <u>(38,035)</u>     | <u>0%</u>               |
| Transfers Out To Capital Improvement Fund | -                   | 859,705             | 859,705             | 100%                    |
| Change in Net Assets                      | (203,959)           | (376,908)           | (172,949)           | 185%                    |
| Net Assets, Beginning                     | <u>2,642,660</u>    | <u>2,642,660</u>    |                     |                         |
| Net Assets, Ending                        | <u>\$ 2,438,701</u> | <u>\$ 2,265,752</u> | (172,949)           | 93%                     |

**Unaudited and Preliminary**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**  
**Stormwater Capital Improvement Fund**  
**For the Period Ended April 30, 2014**

|                                             | Budget<br>FY 2014 | April 30, 2014 | Budget to<br>Actual | Percent<br>of<br>Budget |
|---------------------------------------------|-------------------|----------------|---------------------|-------------------------|
| Transfers In from Stormwater Utility Fund   |                   |                |                     |                         |
| Administration Complex Parking Lot Retrofit | \$ -              | \$ 329,650     | 329,650             | 100%                    |
| Okatie East Retrofit                        | -                 | 60,237         | 60,237              | 100%                    |
| Highway 278 Retrofit                        | -                 | 222,600        | 222,600             | 100%                    |
| Okatie West Land Purchase                   | -                 | 100,000        | 100,000             | 100%                    |
| Upper Battery Creek Retrofit                | -                 | 147,218        | 147,218             | 100%                    |
| Total Transfers In                          | -                 | 859,705        | 859,705             | 100%                    |
| Capital Improvement Expenses                |                   |                |                     |                         |
| Administration Complex Parking Lot Retrofit | -                 | 981            | 981                 | 100%                    |
| Okatie East Retrofit                        | -                 | 17,925         | 17,925              | 100%                    |
| Highway 278 Retrofit                        | -                 | 14,878         | 14,878              | 100%                    |
| Okatie West Land Purchase                   | -                 | -              | -                   | 0%                      |
| Upper Battery Creek Retrofit                | -                 | 14,608         | 14,608              | 100%                    |
| Total Operating Expenses                    | -                 | 48,392         | 48,392              | #DIV/0!                 |
| Change in Net Assets by Project             |                   |                |                     |                         |
| Administration Complex Parking Lot Retrofit | -                 | 328,669        | 328,669             | 100%                    |
| Okatie East Retrofit                        | -                 | 42,312         | 42,312              | 100%                    |
| Highway 278 Retrofit                        | -                 | 207,722        | 207,722             | 100%                    |
| Okatie West Land Purchase                   | -                 | 100,000        | 100,000             | 100%                    |
| Upper Battery Creek Retrofit                | -                 | 132,610        | 132,610             | 100%                    |
| Total Change in Net Assets by Project       | -                 | 811,313        | 811,313             | 100%                    |
| Net Assets, Beginning                       | -                 | -              |                     |                         |
| Net Assets, Ending                          | \$ -              | \$ 811,313     | 811,313             | 100%                    |

**Unaudited and Preliminary**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**  
**Stormwater Utility Fund**  
**For the Period Ended April 30, 2013**

|                                         | Budget<br>FY 2013   | April 30, 2013      | Budget to<br>Actual | Percent<br>of<br>Budget |
|-----------------------------------------|---------------------|---------------------|---------------------|-------------------------|
| Operating Revenues                      |                     |                     |                     |                         |
| Stormwater Utility Fees                 | \$ 3,469,180        | \$ 2,932,407        | (536,773)           | 85%                     |
| Stormwater Utility Project Billings     | 370,664             | 20,299              | (350,365)           | 5%                      |
| Total Operating Revenues                | <u>3,839,844</u>    | <u>2,952,706</u>    | <u>(887,138)</u>    | <u>77%</u>              |
| Operating Expenses                      |                     |                     |                     |                         |
| Personnel                               | 2,014,323           | 1,515,782           | (498,541)           | 75%                     |
| Purchased Services                      | 1,296,188           | 660,589             | (635,599)           | 51%                     |
| Supplies                                | 426,597             | 239,024             | (187,573)           | 56%                     |
| Depreciation                            | 273,545             | 227,960             | (45,585)            | 83%                     |
| Total Operating Expenses                | <u>4,010,653</u>    | <u>2,643,355</u>    | <u>(1,367,298)</u>  | <u>66%</u>              |
| Operating Income (Loss)                 | (170,809)           | 309,351             | 480,160             | -181%                   |
| Non-Operating Revenues (Expenses)       |                     |                     |                     |                         |
| Interest Earned                         | 11,389              | -                   | (11,389)            | 0%                      |
| Total Non-Operating Revenues (Expenses) | <u>11,389</u>       | <u>-</u>            | <u>(11,389)</u>     | <u>100%</u>             |
| Change in Net Assets                    | (159,420)           | 309,351             | 468,771             | -194%                   |
| Net Assets, Beginning                   | <u>2,733,646</u>    | <u>2,733,646</u>    |                     |                         |
| Net Assets, Ending                      | <u>\$ 2,574,226</u> | <u>\$ 3,042,997</u> | 468,771             | 118%                    |



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



February 5, 2013

TO: Bryan Hill, Deputy Administrator

VIA: David Starkey, Chief Financial Officer  
Robert Klink, County Engineer  
Dave Thomas, Purchasing Director  
Monica Spells, Compliance Officer

FROM: Robert McFee, P.E., Stormwater Manager  
Alan Eisenman, Finance Supervisor

SUBJ: Capital Improvement Budget Transfer for the Stormwater Utility

**BACKGROUND.** On July 19, 2012 a Balance Utilization Plan was developed based on a July 13, 2012 request to develop a plan to where the Stormwater Utility cash balance in the month of November/December would be near zero. This plan focused on funding retrofit projects to implement the 5-year watershed restoration plan that was approved by the County Council in January 2012. This plan identified eight restoration activities ranging in cost from \$107,000 to \$4,095,000 for an estimated total cost of \$9,279,000. Since the lowest cash balance in fiscal year 2011 was \$847,658, there will be issues with trying to fund the larger retrofit projects when they are ready.

This issue was discussed at the November 7, 2012 Stormwater Utility Board and they made a suggestion of considering a capital improvement fund to direct funds to these watershed restoration projects. Staff discussed their suggestion, but rather recommends making a budget transfer from unrestricted net assets to capital project expense accounts to fund these projects. This offers a method of meeting our cash balance goal and having adequate funds to complete the restoration projects as they proceed during the 5-year watershed restoration period. Projects to utilize the funds will be identified separately in the 5-year budget for the Utility.

**DISCUSSION.** It is proposed to request a capital improvement budget transfer that will be restricted to fund large Watershed Restoration Projects that cannot be supported with funds available in a single fiscal year budget. The initial capital improvement budget transfer will be for the projects expected to be funded in the next year. These will be:

|        |                                             | Less FY 13 Exp        | FY 14 Transfer |
|--------|---------------------------------------------|-----------------------|----------------|
| SW1-11 | Administration Complex Parking Lot Retrofit | \$330,000 - 350       | = 329,650      |
| SW2-12 | Okatie East Retrofit                        | \$107,000 - 46,762.66 | = 60,237.34    |
| SW3-13 | Highway 278 Retrofit (SWU portion)          | \$231,000 - 8,400     | = 222,600      |
| SW4-14 | Okatie West Land Purchase                   | \$100,000 - 0         | = 100,000      |
|        | Total                                       | \$768,000 - 55,512.66 | = 712,487.34   |

In the future, as additional unrestricted net asset balances become available Stormwater Utility will request a capital improvement budget transfer to fund future watershed retrofit projects.

**RECOMMENDATION:** A Stormwater Utility Capital Improvement Budget Transfer made for \$768,000 to fund Watershed Restoration Projects necessary to restore designated water uses and comply with Total Maximum Daily Load (TMDL) requirements.



# Beaufort County Public Works Stormwater Utility

## Budget Comparison

Revised Date: December 31, 2013

### Revenue/Reserve Utilization

|                                    | Board<br>Budget     | FY2013<br>Unaudited<br>Actuals | Variance          | FY 2014<br>Approved<br>Budget |
|------------------------------------|---------------------|--------------------------------|-------------------|-------------------------------|
| <b>Revenue</b>                     |                     |                                |                   |                               |
| Admin SWU Fees                     | \$ 309,117          | \$ 311,086                     | \$ (1,969)        | \$ 312,064                    |
| Utility Activities SWU Fees        | 3,160,063           | 2,759,703                      | 400,360           | 3,162,936                     |
| <b>Total Revenue from SWU Fees</b> | 3,469,180           | 3,070,789                      | 398,391           | 3,475,000                     |
| Reimbursable Projects              | 63,000              | 33,808                         | 29,192            | 2,500                         |
| Interest                           | 11,389              | 2,955                          | 8,434             | 6,923                         |
| Other Charges                      | -                   | (2,920)                        | 2,920             | -                             |
| Cost-Share for Joint Efforts       | 307,664             | 50,403                         | 257,261           | 57,522                        |
| <b>Reserve Utilization</b>         |                     |                                |                   |                               |
| Del Webb Agreement Fund            | -                   | -                              | -                 | -                             |
| Stormwater Utility                 | 159,420             | 90,986                         | 68,434            | -                             |
|                                    | <b>\$ 4,010,653</b> | <b>\$ 3,246,022</b>            | <b>\$ 764,631</b> | <b>\$ 3,541,945</b>           |

### Efforts (Expenditures)

|                                     | FY2013              |                     |                   | FY2014              |
|-------------------------------------|---------------------|---------------------|-------------------|---------------------|
| Admin                               | \$ 309,117          | \$ 244,053          | \$ 65,064         | \$ 312,064          |
| <b>Utility Activities</b>           |                     |                     |                   |                     |
| UA/Control Reg                      | 113,560             | 78,147              | 35,413            | 73,147              |
| UA/WQ Monitoring                    | 148,200             | 174,766             | (26,566)          | 160,000             |
| UA/WQ Controls                      | 440,580             | 60,248              | 380,332           | 200,000             |
| UA/Annual Maintenance               | 2,364,776           | 2,376,048           | (11,272)          | 2,679,069           |
| UA/Public Information/Outreach      | 75,000              | 67,665              | 7,335             | 67,665              |
| UA/Drainage Enhancement             | 25,000              | 2,700               | 22,300            | 25,000              |
| UA/Additional Studies               | 375,000             | 242,394             | 132,606           | 25,000              |
| <b>Utility Activities Subtotal</b>  | 3,542,116           | 3,001,968           | 540,148           | 3,229,881           |
| <b>*Reserve Utilization</b>         |                     |                     |                   |                     |
| UA/WQ Controls                      | 159,420             | -                   | 159,420           | -                   |
| <b>Reserve Utilization Subtotal</b> | 159,420             | -                   | 159,420           | -                   |
| <b>Efforts Total</b>                | <b>\$ 4,010,653</b> | <b>\$ 3,246,022</b> | <b>\$ 764,631</b> | <b>\$ 3,541,945</b> |

**carolynw:**  
\$350 - BC Admin Bldg  
\$4,735.10 - Shanklin Rd  
WQ Retrofit (includes  
Ward Edwards Invoices)  
\$8,400 - Hwy 278  
\$46,762.66 - Okatie East

\*Efforts funded by utilizing the reserve are spread among all utility activities.

### Change in Capital Assets On Balance Sheet

|                          | FY2013              |                     |                    | FY2014            |
|--------------------------|---------------------|---------------------|--------------------|-------------------|
| Capital Assets Additions | \$ 126,367          | \$ 146,212          | \$ (19,845)        | \$ 455,991        |
| Depreciation             | (273,545)           | (248,463)           | (25,082)           | (242,119)         |
|                          | <b>\$ (147,178)</b> | <b>\$ (102,250)</b> | <b>\$ (44,928)</b> | <b>\$ 213,872</b> |

## Hickman, Maggie

---

**From:** Thomas East [teast@cityofbeaufort.org]  
**Sent:** Wednesday, July 03, 2013 10:13 AM  
**To:** McFee, Robert  
**Cc:** Hickman, Maggie; Scott Dadson; Isiah Smalls; Lamar Taylor  
**Subject:** Letter of Commitment  
**Attachments:** DOC011.pdf; 319 County Grant Commitment.doc

Rob,

Good morning. We are approaching the 319 Grant deadline of July 15<sup>th</sup> and need Mr. Gary Kubic's letter of commitment. This is the only grant application document requiring his signature as well as Scott Dadson's signature.

Attached is a copy of the letter signed by Scott and the Word document for preparing Mr. Kubic's letter for signature. You will need to add these words to a County letterhead then print for his signature.

The 319 Grant pays up to 60% requiring a local match of 40%. The 40% local match will be split evenly between the City and the County. Ward Edwards estimates the total cost to be \$736,088 requiring the City and County to provide a local match of \$147,217.60 each.

Once Mr. Kubic signs this on County letterhead, please scan and email it to me.

Thanks,

*Thomas East, Accountant*

City of Beaufort  
1911 Boundary Street  
Beaufort, SC 29902  
Ph: 843-525-7071  
Fax: 843-986-5606  
[www.cityofbeaufort.org](http://www.cityofbeaufort.org)

STATE OF SOUTH CAROLINA )  
 )  
COUNTY OF BEAUFORT )

INTERGOVERNMENTAL AGREEMENT

This Intergovernmental Agreement (“Agreement”) was developed February xx, 2013 between the City of Beaufort (hereinafter referred to as the “City”) and Beaufort County, South Carolina (hereinafter referred to as the “County” ) and together with the City, (“Parties”, each a “Party”) to define and implement environmental initiatives related to the protection of Upper Battery Creek Watershed.

**WHEREAS**, the City and County realize that the protection of this watershed and other outstanding natural water resources are of utmost importance to our community; and

**WHEREAS**, drainage to Upper Battery Creek are located in both City and unincorporated County boundaries; and

**WHEREAS**, the City and County understand that the development of a partnership for safeguarding of the watersheds and other outstanding natural water resources is of the utmost importance; and

**WHEREAS**, the City and County understand that water quality monitoring indicates that the drainage from the Cross Creek area is contributing the highest known levels of bacteria loads to the Upper Battery Creek;

**NOW, THEREFORE**, for and in consideration of mutual promises, undertakings, and covenants set forth herein, the receipt and sufficiency of which is acknowledged and affirmed by the City and the County, the Parties hereto agree to this amendment as follows:

1. **Establish a cost sharing mechanism on the initial Cross Creek area (Burton Hill) retrofit project.** It is the intent of the Parties that cost sharing should be on an equal basis with each party contributing 50% of the local cost. This includes the cost of preparing the watershed base plan and the 319 grant application by Ward Edwards, estimated to be \$13,200. Should the City and County be awarded the grant, the remaining cost will be split on an even basis with each party contributing 50% of the remaining cost after applying the grant funds.
2. **Implementation of Burton Hill retrofit project**
  - a. Through a competitive RFQ process, the City has selected an engineering firm for an Indefinite Delivery Contract. The selected engineer, Ward Edwards, Inc., will be responsible for the design of the project. Design shall be broken into two parts, the first of which will be preliminary

engineering and surveying to determine the feasibility and performance of the proposed retrofit described as Burton Hill M2. If this initial work demonstrates the likely benefit to water quality, final design will commence and encompass all work required successfully complete necessary project designs and drawings.

- b. The City will take lead in the project and be the decision maker throughout the project. Should the City and County be awarded the 319 Federal Grant, the City will be the named Grantee. The City will be responsible for paying all invoices related to the project. The City will request reimbursement from the Grantor on a quarterly basis. The City will submit an invoice to the County for their share on a quarterly basis. The County must reimburse the City within 30 days of the invoice date.
  - c. Parties will proceed with construction as budgets allow.
3. **Term.** This agreement shall remain in force until the completion of Cross Creek retrofit known also as the Burton Hill M2 retrofit. Additional retrofit projects, if needed, will be addressed in separate agreements.

**IN WITNESS WHEREOF**, the Parties hereto have affixed their signatures hereto the date first written hereinabove.

Dated this 30<sup>th</sup> day of August 2013

**BEAUFORT COUNTY**

By \_\_\_\_\_

Date \_\_\_\_\_

Address:  
P.O. Drawer 1228  
Beaufort, SC 29901-1228

**CITY OF BEAUFORT**

By \_\_\_\_\_

Date \_\_\_\_\_

Address:  
1911 Boundary Street  
Beaufort, SC 29902

# Beaufort County Public Works Stormwater Utility

## Preliminary Budget Comparison

Revised Date: May 19, 2014

### Unaudited Projected Revenue

|                              | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|------------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| <b>Revenue</b>               |                                        |                                        |                             |
| Admin SWU Fees               | 312,064                                | 313,460                                | 313,460                     |
| Utility Activities SWU Fees  | 3,162,936                              | 2,814,138                              | 2,766,881                   |
| <b>Revenue from SWU Fees</b> | <b>3,475,000</b>                       | <b>3,127,598</b>                       | <b>3,080,341</b>            |
| Reimbursable Projects        | 2,500                                  | 2,500                                  | 2,500                       |
| Interest                     | 6,923                                  | 2,955                                  | 2,955                       |
| Cost-Share for Joint Efforts | 57,522                                 | 41,689                                 | 41,689                      |
| <b>Reserve Utilization</b>   |                                        |                                        |                             |
| Del Webb Agreement Fund      | -                                      | -                                      |                             |
| Stormwater Utility           | -                                      | 413,581                                | 351,091                     |
|                              | <b>3,541,945</b>                       | <b>3,588,323</b>                       | <b>3,478,576</b>            |

### Efforts (Expenditures)

|                                     | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|-------------------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| Admin                               | 312,064                                | 323,941                                | 313,460                     |
| <b>Utility Activities</b>           |                                        |                                        |                             |
| UA/Control Reg                      | 73,147                                 | 257,274                                | 216,956                     |
| UA/WQ Monitoring                    | 160,000                                | 120,000                                | 120,000                     |
| UA/WQ Controls                      | 200,000                                | -                                      | -                           |
| UA/Annual Maintenance               | 2,679,069                              | 2,783,108                              | 2,736,160                   |
| UA/Public Information/Outreach      | 67,665                                 | 50,000                                 | 50,000                      |
| UA/Drainage Enhancement             | 25,000                                 | 19,000                                 | 7,000                       |
| UA/Additional Studies               | 25,000                                 | 35,000                                 | 35,000                      |
| <i>Utility Activities Subtotal</i>  | <b>3,229,881</b>                       | <b>3,264,382</b>                       | <b>3,165,116</b>            |
| <b>*Reserve Utilization</b>         |                                        |                                        |                             |
| <i>Reserve Utilization Subtotal</i> | -                                      | -                                      | -                           |
| <b>Efforts Total</b>                | <b>3,541,945</b>                       | <b>3,588,323</b>                       | <b>3,478,576</b>            |

\*Efforts funded by utilizing the reserve are spread among all utility activities.

### Change in Capital Assets On Balance Sheet

|                          | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|--------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| Capital Assets Additions | 455,991                                | 340,604                                | 166,561                     |
| Depreciation             | (242,119)                              | (192,181)                              | (182,523)                   |
|                          | 213,872                                | 148,423                                | (15,962)                    |

### SUMMARY

|                                                            | FY2014<br>Requested<br>Board<br>Budget | FY2015<br>Requested<br>Board<br>Budget | FY2015<br>Revised<br>Budget |
|------------------------------------------------------------|----------------------------------------|----------------------------------------|-----------------------------|
| Cash Balance                                               | -                                      | -                                      | 1,611,101                   |
| Revenue                                                    | -                                      | -                                      | 3,127,485                   |
| Revenue - SFU Rate Increase                                | -                                      | -                                      |                             |
| Expenditures (Includes Depreciation)                       | -                                      | -                                      | (3,478,576)                 |
| Capital Purchases                                          | -                                      | -                                      | (166,561)                   |
| Reserve Policy                                             | -                                      | -                                      | -                           |
| Capital Projects                                           | -                                      | -                                      | (845,999)                   |
|                                                            | -                                      | -                                      | 247,450                     |
| Operating Income (Loss) (15.1% of<br>SWI Personnel Budget) | -                                      | -                                      | 278,366                     |
| <b>Reserve</b>                                             | -                                      | -                                      | 525,816                     |

|                                                                                                          | Budget<br>FY 2015 | Budget<br>FY 2016 | Budget<br>FY 2017 | Budget<br>FY 2018 | Budget<br>FY 2019 | Budget<br>FY 2020 | Budget<br>FY 2021 | Budget<br>FY 2022 | Budget<br>FY 2023 | Budget<br>FY 2024 |   |            |
|----------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---|------------|
| CAPITAL PROJECTS                                                                                         |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |   |            |
| SC170/Okatie West                                                                                        | 60,000            | 315,000           | 600,000           |                   |                   |                   |                   |                   |                   |                   | = | 975,000    |
| Hwy 278 Retrofit (Ttl estimate \$231K)                                                                   | 216,122           |                   |                   |                   |                   |                   |                   |                   |                   |                   | = | 216,122    |
| Admin Bldg Parking Lot (Ttl estimate \$330K)                                                             | 327,768           |                   |                   |                   |                   |                   |                   |                   |                   |                   | = | 327,768    |
| Battery Creek (Revised estimate for cost-share \$147K)                                                   | 132,609           |                   |                   |                   |                   |                   |                   |                   |                   |                   | = | 132,609    |
| Buckingham Plantation                                                                                    | 100,000           | 400,000           | 400,000           |                   |                   |                   |                   |                   |                   |                   | = | 900,000    |
| Sawmill Creek Overtopping/Forby (land \$100K/design \$25K/\$25K Construction)                            |                   | 125,000           | 25,000            |                   |                   |                   |                   |                   |                   |                   | = | 150,000    |
| Brewer Memorial Park Demonstration Wet Pond Porject (Feasibility \$9.5K/Design \$20K/Construction \$50K) | 9,500             | 20,000            |                   | 50,000            |                   |                   |                   |                   |                   |                   | = | 79,500     |
| Salt Creek South M1 (\$245K Design/\$400K ROW/\$1.4M Construction)                                       |                   |                   |                   | 245,000           | 400,000           | 1,400,000         |                   |                   |                   |                   | = | 2,045,000  |
| Shanklin Road M2 (\$330K Design/ \$660K ROW/\$2.35K Construction)                                        |                   |                   |                   | 330,000           | 660,000           |                   | 2,350,000         |                   |                   |                   | = | 3,340,000  |
| Factory Creek M2(\$200K Design/\$340K ROW/\$1.2M Construction)                                           |                   |                   |                   | 200,000           |                   | 340,000           |                   | 1,200,000         |                   |                   | = | 1,740,000  |
| Grober Hill M2 (\$225K Design/\$900K ROW/\$1.4M Construction)                                            |                   |                   |                   | 225,000           |                   | 900,000           |                   | 1,400,000         |                   |                   | = | 2,525,000  |
| Camp St. Mary M2 (\$342K Design/\$165K ROW/\$3.25M Construction)                                         |                   |                   |                   |                   |                   |                   | 342,000           | 165,000           | 3,250,000         |                   | = | 3,757,000  |
| Battery Creek West M1(\$375K Design/\$165K ROW/\$3.6M Construction)                                      |                   |                   |                   |                   |                   |                   |                   | 375,000           | 165,000           | 3,600,000         | = | 4,140,000  |
| Paige Point Overtopping Design (\$30K/\$305K Construction)                                               |                   |                   |                   |                   |                   |                   |                   |                   | 30,000            | 305000            | = | 335,000    |
|                                                                                                          | 845,999           | 860,000           | 1,025,000         | 1,050,000         | 1,060,000         | 2,640,000         | 2,692,000         | 3,140,000         | 3,445,000         | 3,905,000         | = | 20,662,999 |

**County Retrofit Project: SC170/Okatie West**  
**Activity: Regional/Retrofit BMP**  
**Township: Bluffton**

**Project Schedule: FY 2015-2017**

**Project Cost: \$975,000**

**\$60,000 (2015)**

**\$315,000 (2016)**

**\$600,000 (2017)**



**Drainage**

**TYPE**

|                          |                  |
|--------------------------|------------------|
| — River                  | — Roadside       |
| — Creek/Stream           | — Roadside Pipe  |
| — River/Creek/Marsh BANK | — Road Pipe      |
| — Channel (fka Outfall)  | — Crossline Pipe |
| — Channel Pipe           | — Driveway Pipe  |
| — Lateral                | — Access Pipe    |
| — Lateral Pipe           | — Bleeder Pipe   |



0 1,400 2,800 5,600 8,400 11,200 Feet

**1 inch = 3,771 feet**

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** The Okatie River watershed has been identified as a high priority watershed for water quality improvements due to bacteria contamination. The east branch of the headwaters was improved in FY2014 with a wetland enhancement project near Island West golf course and subdivision. A similar enhancement or detention basin is planned for the west branch. Increased runoff from the widening of SC170 in the west branch subwatershed basin adds to the need for a retrofit to the watershed to improve stormwater runoff water quality and reduce runoff volume. The project is a series of detention basins along SC170.

**County Retrofit Project: Hwy 278 Retrofit**  
**Activity: Retrofit BMP**  
**Township: Bluffton**

**Project Schedule: FY 2015**

**Project Cost: \$216,122**



**Drainage**

| TYPE                   |                |
|------------------------|----------------|
| River                  | Roadside       |
| Creek/Stream           | Roadside Pipe  |
| River/Creek/Marsh BANK | Road Pipe      |
| Channel (fka Outfall)  | Crossline Pipe |
| Channel Pipe           | Driveway Pipe  |
| Lateral                | Access Pipe    |
| Lateral Pipe           | Bleeder Pipe   |



0 900 1,800 3,600 5,400 7,200 Feet

**1 inch = 2,468 feet**

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description: Construct four detention basins along US 278 between Pickney Colony Road and SC170 to intercept stormwater runoff, provide water quality treatment, and reduce volume into the Okatie River. The Okatie is impaired by bacteria pollution, a major source being urban runoff.**

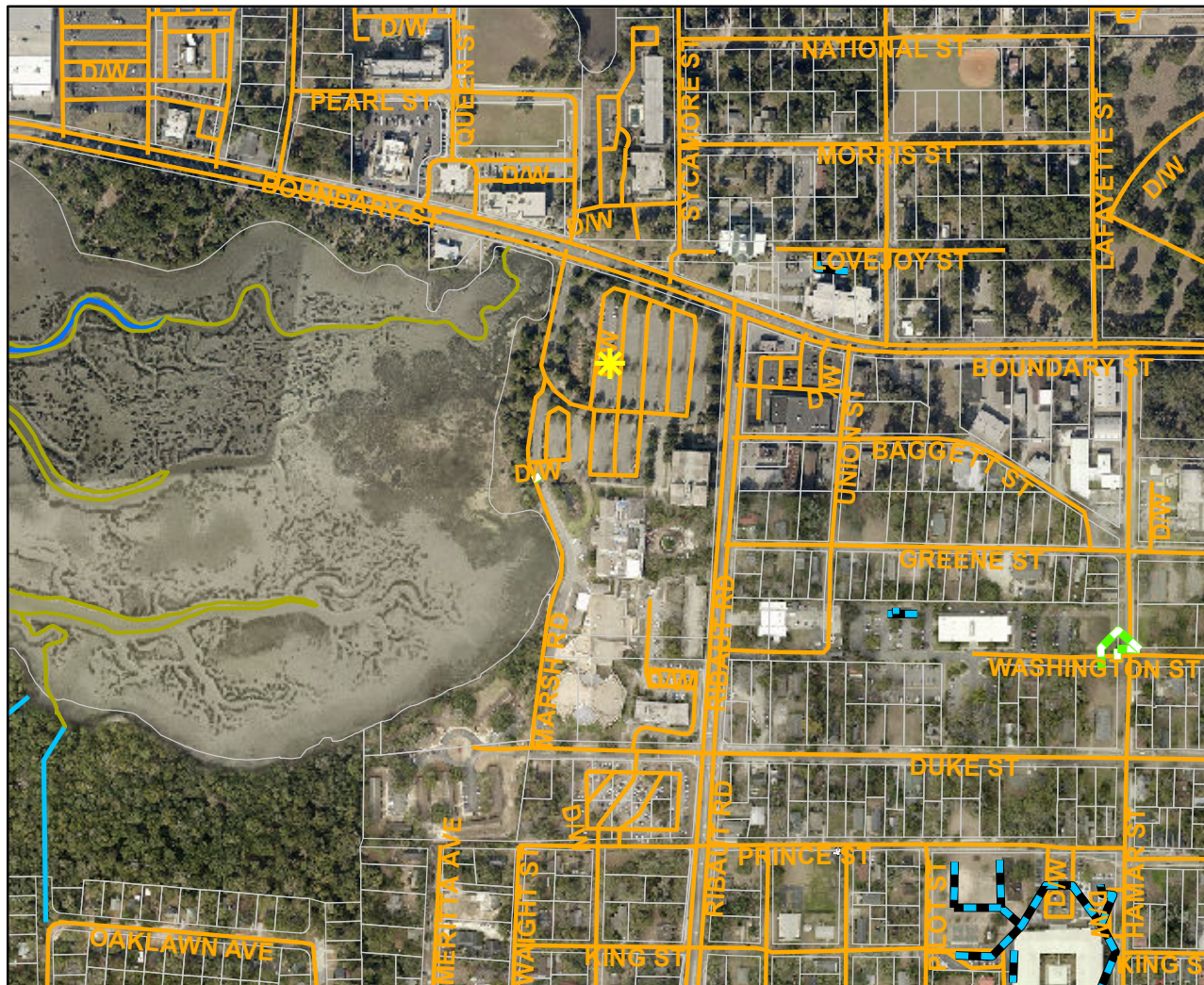
# County Retrofit Project: Beaufort County Administration Parking Lot

## Activity: Demonstration BMP

### Township: Port Royal Island

Project Schedule: FY 2015

Project Cost: \$327,768



#### Drainage

| TYPE                   |                  |
|------------------------|------------------|
| River                  | — Roadside       |
| Creek/Stream           | — Roadside Pipe  |
| River/Creek/Marsh BANK | — Road Pipe      |
| Channel (fka Outfall)  | — Crossline Pipe |
| Channel Pipe           | — Driveway Pipe  |
| Lateral                | — Access Pipe    |
| Lateral Pipe           | — Bleeder Pipe   |



1 inch = 563 feet

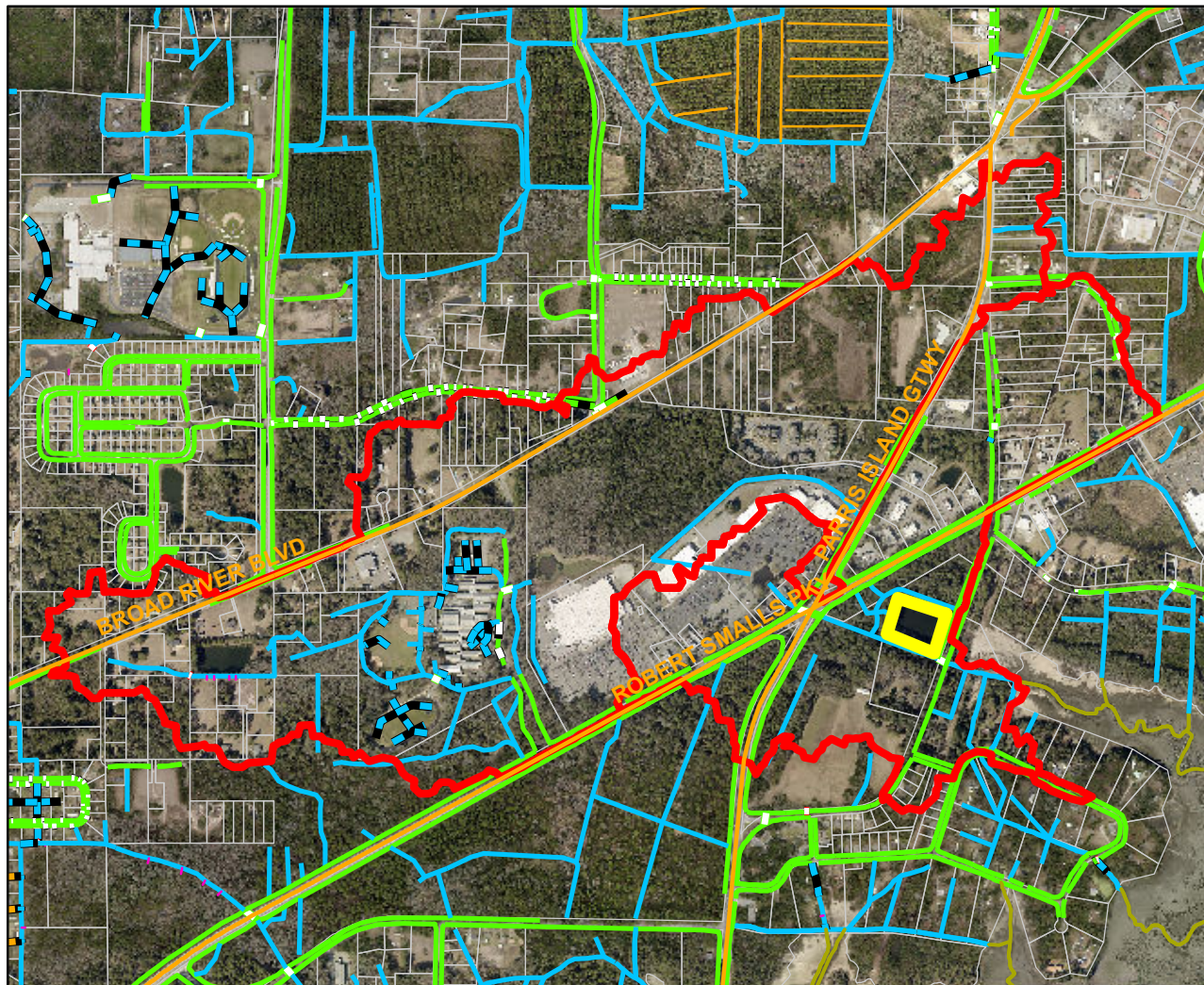
Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Retrofit a portion of the parking lot at the County Administration Building on Ribaut Road with pervious pavement and bio-swales to reduce stormwater runoff volume and provide water quality treatment prior to discharge into the Battery Creek. This project is envisioned as a demonstration project due to the high profile location and provides an opportunity to educate the public on stormwater pollution and best management practices to address the same. Battery Creek is impaired by bacteria pollution, a major source being urban runoff.

County Retrofit Project: Battery Creek 319  
Activity: Regional BMP  
Township: Port Royal Island

Project Schedule: FY 2015

Project Cost: \$132,609



**Drainage**

**TYPE**

|                          |                  |
|--------------------------|------------------|
| — River                  | — Roadside       |
| — Creek/Stream           | — Roadside Pipe  |
| — River/Creek/Marsh BANK | — Road Pipe      |
| — Channel (fka Outfall)  | — Crossline Pipe |
| — Channel Pipe           | — Driveway Pipe  |
| — Lateral                | — Access Pipe    |
| — Lateral Pipe           | — Bleeder Pipe   |



0 500 1,000 2,000 3,000 4,000 Feet

1 inch = 1,426 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

Description: Construct a detention pond to intercept stormwater runoff from an densely developed urban area of the BatteryCreek watershed near SC170 and the US 21and the Cross Creek Shopping Center. The Project is partially funded by a US EPA Section 319 grant with the match being shared by the City of Beaufort and Beaufort County. Battery Creek is impaired by bacteria pollution, a major source being urban runoff.

# County Retrofit Project: Buckingham Plantation Stormwater Retrofit

## Activity: Retrofit BMP

### Township: Bluffton

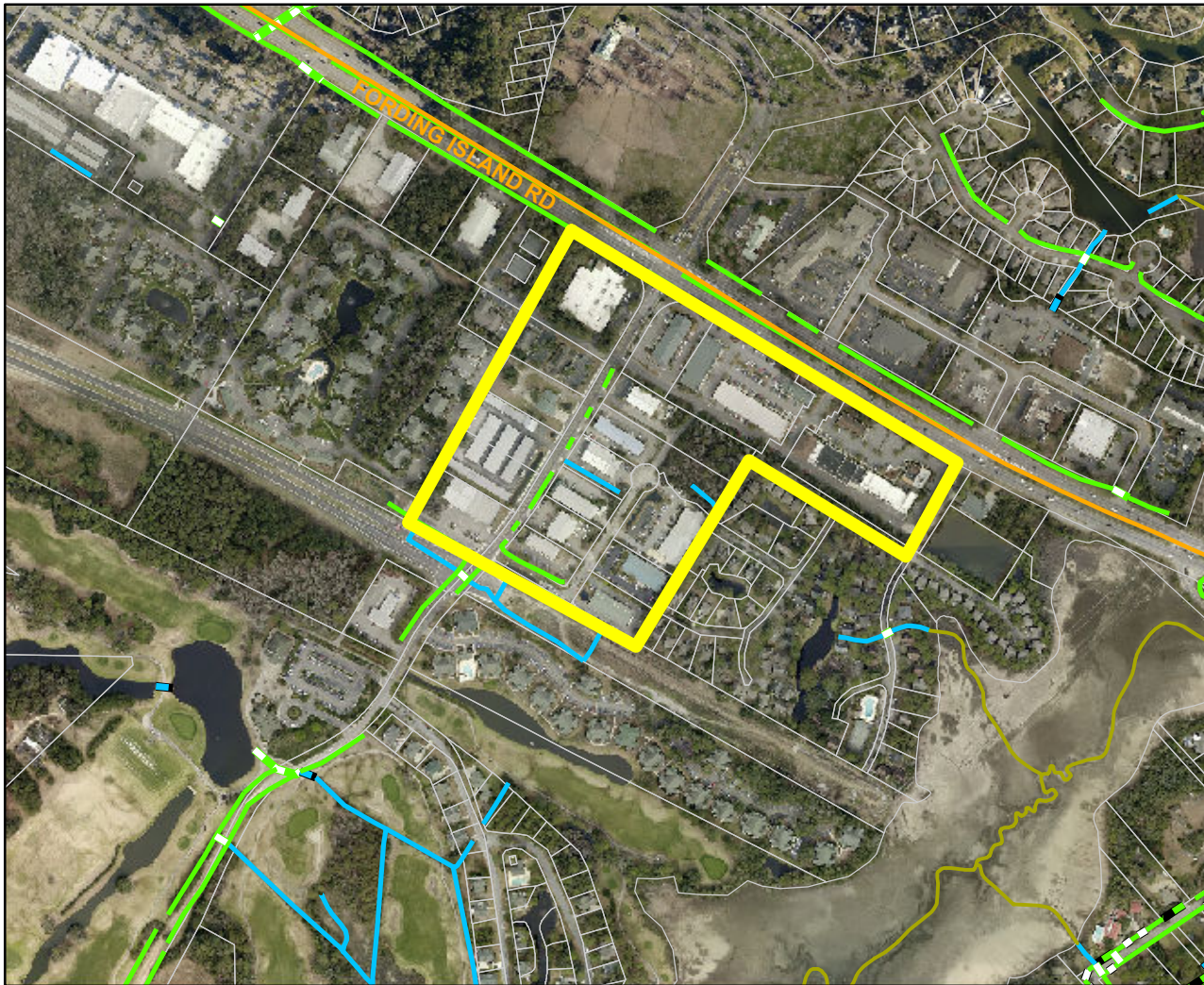
Project Schedule: FY 2015-2017

Project Cost: \$900,000

\$100,000 (2015)

\$400,000 (2016)

\$400,000 (2017)



#### Drainage

##### TYPE

|                          |                  |
|--------------------------|------------------|
| — River                  | — Roadside       |
| — Creek/Stream           | — Roadside Pipe  |
| — River/Creek/Marsh BANK | — Road Pipe      |
| — Channel (fka Outfall)  | — Crossline Pipe |
| — Channel Pipe           | — Driveway Pipe  |
| — Lateral                | — Access Pipe    |
| — Lateral Pipe           | — Bleeder Pipe   |



0 235 470 940 1,410 1,880 Feet

1 inch = 628 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Upgrading Buckingham Plantation Drive and Anolyn Ct. with water quality best management practices to provide stormwater runoff treatment and volume reduction. This project will be in conjunction with other area improvements designed to promote economic redevelopment of the area.

# County Retrofit Project: Sawmill Creek Overtopping/Forby Land

## Activity: Mitigation BMP

### Township: Bluffton

Project Schedule: FY 2016-2017

Project Cost: \$150,000  
 \$125,000 (2016)  
 \$25,000 (2017)

#### Drainage

| TYPE                   |                  |
|------------------------|------------------|
| River                  | — Roadside       |
| Creek/Stream           | — Roadside Pipe  |
| River/Creek/Marsh BANK | — Road Pipe      |
| Channel (fka Outfall)  | — Crossline Pipe |
| Channel Pipe           | — Driveway Pipe  |
| Lateral                | — Access Pipe    |
| Lateral Pipe           | — Bleeder Pipe   |



0 250 500 1,000 1,500 2,000 Feet

1 inch = 667 feet

Prepared By: BC Stormwater Management Utility  
 Date Print: 5/19/14



**Description:** Overtopping of US 278 near Sawmill Creek Road during a 100 - year storm event was identified in the 2006 Stormwater Master Plan. US 278 serves as an evacuation route during a hurricane. The project scope is to construct a detention pond via a wetland enhancement to slow stormwater discharge to the existing culverts under US 278 and to provide water quality treatment and runoff volume reduction. The project will be in conjunction with another project to construct a frontage road in the location providing additional interconnectivity along the south side of the highway.

# County Retrofit Project: Brewer Memorial Park Demonstration Wet Pond Project Feasibility

## Activity: Demonstration BMP

### Township: Lady's Island

Project Schedule: FY 2015, 2016 & 2018

Project Cost: \$79,500  
 \$9,500 (2015)  
 \$20,000 (2016)  
 \$50,000 (2018)

#### Drainage

| TYPE                   |                  |
|------------------------|------------------|
| River                  | — Roadside       |
| Creek/Stream           | — Roadside Pipe  |
| River/Creek/Marsh BANK | — Road Pipe      |
| Channel (fka Outfall)  | — Crossline Pipe |
| Channel Pipe           | — Driveway Pipe  |
| Lateral                | — Access Pipe    |
| Lateral Pipe           | — Bleeder Pipe   |



0 62.5 125 250 375 500 Feet

1 inch = 167 feet

Prepared By: BC Stormwater Management Utility  
 Date Print: 5/19/14

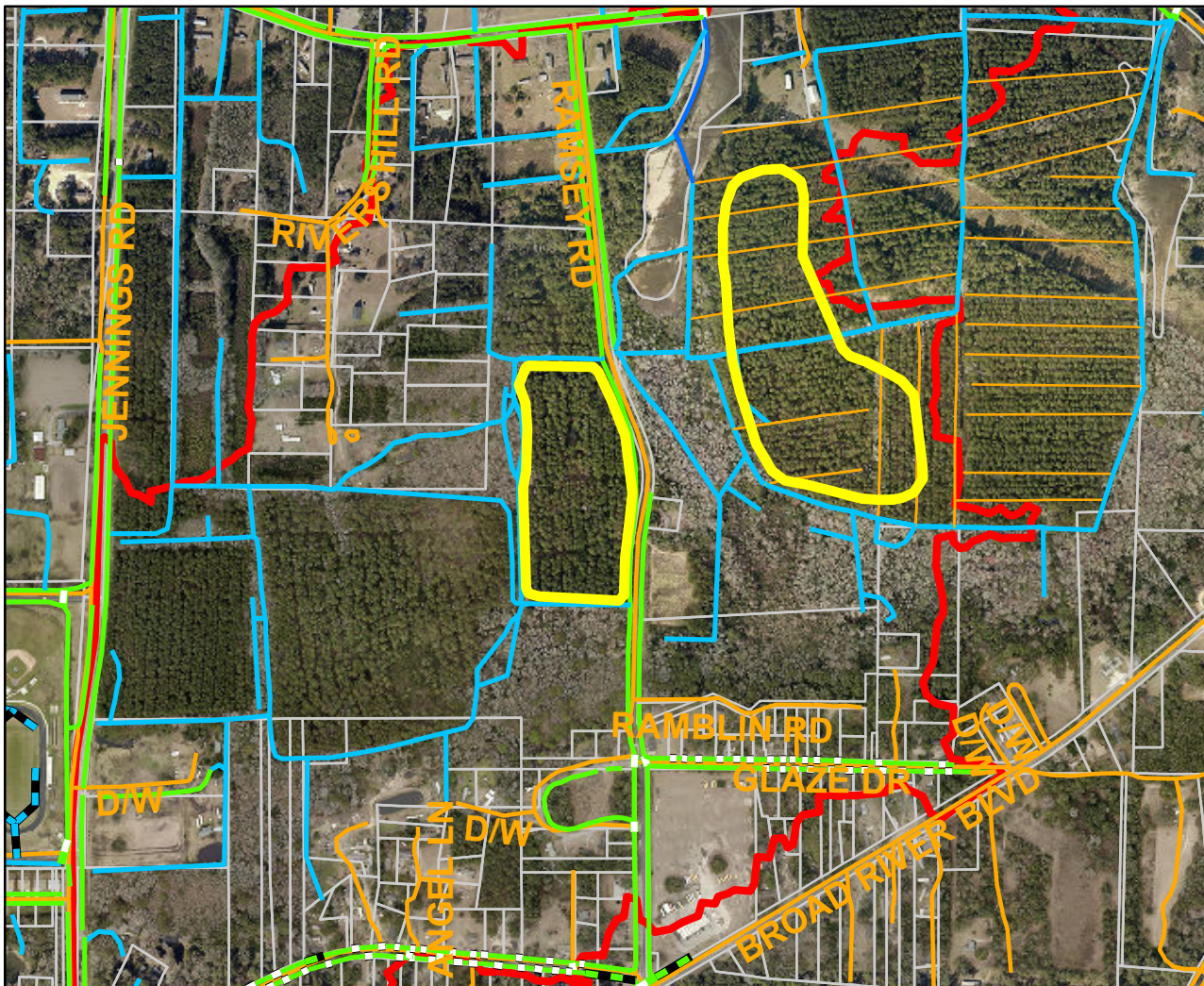


**Description:** Retrofit a former bait pond at the Brewer Memorial Park on Lady's Island. The site has runoff from Sea Island Parkway and adjacent properties that discharges directly to Factory Creek without water quality treatment or volume reduction. The site is envisioned as a demonstration site due to the high profile location. The park is being built with separate funding through the Beaufort Open Land Trust and will include a boardwalk and landscaping around the pond, providing opportunity for viewing and public education.

County Retrofit Project: Salt Creek South M1  
Activity: Regional BMP  
Township: Port Royal Island

Project Schedule: FY 2018-2020

Project Cost: \$2,045,000  
\$245,000 (2018)  
\$400,000 (2019)  
\$1,400,000 (2020)



**Drainage**

**TYPE**

|                        |                |
|------------------------|----------------|
| River                  | Roadside       |
| Creek/Stream           | Roadside Pipe  |
| River/Creek/Marsh BANK | Road Pipe      |
| Channel (fka Outfall)  | Crossline Pipe |
| Channel Pipe           | Driveway Pipe  |
| Lateral                | Access Pipe    |
| Lateral Pipe           | Bleeder Pipe   |



0 312.5 625 1,250 1,875 2,500 Feet

1 inch = 833 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Development in the Salt Creek South hydrologic sub-basin in the Albergotti Creek watershed includes approx. 330 acres of rural and single family development built prior to stormwater regulations. There are no stormwater best management practices, such as detention facilities, in the area. The project would be to construct a regional detention facility to provide stormwater runoff water quality treatment and volume reduction. Due to the presence of multiple wetlands in the area, project design would involve delineation and avoidance of the wetlands, making construction cost a limiting factor for project implementation. Albergotti Creek is impaired by bacteria pollution, a major source being urban runoff. The Creek is being proposed for reclassification to allow shellfish harvesting, making this project a higher priority than in the past. The watershed of the site is located within Beaufort County.

**County Retrofit Project: Shanklin Road M2**  
**Activity: Regional BMP**  
**Township: Port Royal Island**

**Project Schedule: FY 2018-2019 & FY 2021**

**Project Cost: \$3,340,000**  
**\$330,000 (2018)**  
**\$660,000 (2019)**  
**\$2,350,000 (2021)**

**Drainage**

**TYPE**

|                          |                  |
|--------------------------|------------------|
| — River                  | — Roadside       |
| — Creek/Stream           | — Roadside Pipe  |
| — River/Creek/Marsh BANK | — Road Pipe      |
| — Channel (fka Outfall)  | — Crossline Pipe |
| — Channel Pipe           | — Driveway Pipe  |
| — Lateral                | — Access Pipe    |
| — Lateral Pipe           | — Bleeder Pipe   |



0 345 690 1,380 2,070 2,760 Feet

**1 inch = 917 feet**

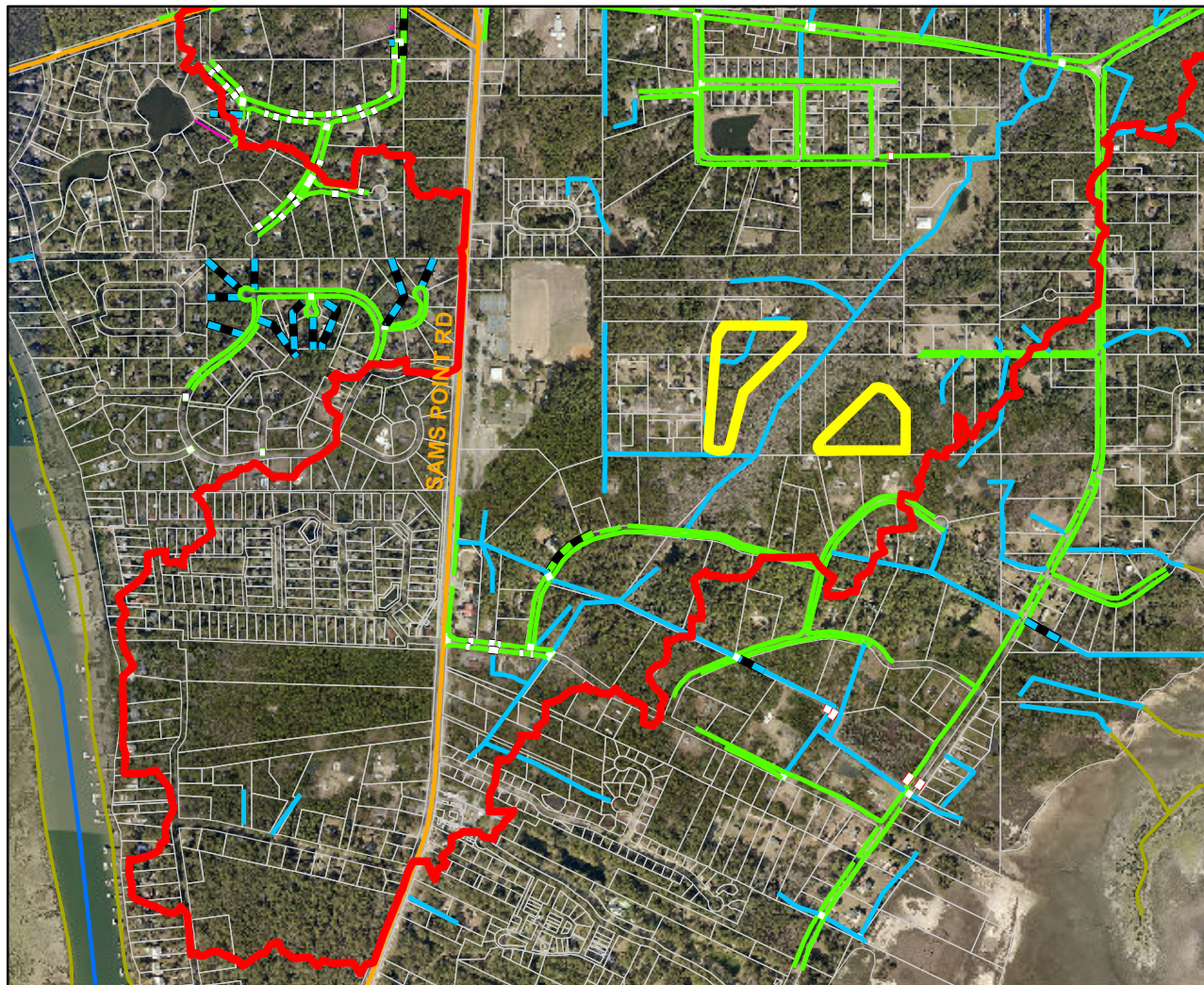
Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Development in the Shanklin Road hydrologic sub-basin in the Albergotti Creek watershed includes approx. 600 acres of rural, single family development, commercial, and industrial built prior to stormwater regulations. There are no stormwater best management practices, such as detention facilities, in the area. The project would be to construct a regional detention facility to provide stormwater runoff water quality treatment and volume reduction. Due to the presence of multiple wetlands in the area, project design would involve delineation and avoidance of the wetlands, making construction cost a limiting factor for project implementation. Albergotti Creek is impaired by bacteria pollution, a major source being urban runoff. The Creek is being proposed for reclassification to allow shellfish harvesting, making this project a higher priority than in the past. The watershed of the site is located within Beaufort County.

**County Retrofit Project: Factory Creek M2**  
**Activity: Regional BMP**  
**Township: Lady's Island**

**Project Schedule: FY 2018, 2020 & 2022**

**Project Cost: \$1,740,000**  
**\$200,000 (2018)**  
**\$340,000 (2020)**  
**\$1,200,000 (2022)**



**Drainage**

| TYPE                   |                  |
|------------------------|------------------|
| River                  | — Roadside       |
| Creek/Stream           | — Roadside Pipe  |
| River/Creek/Marsh BANK | — Road Pipe      |
| Channel (fka Outfall)  | — Crossline Pipe |
| Channel Pipe           | — Driveway Pipe  |
| Lateral                | — Access Pipe    |
| Lateral Pipe           | — Bleeder Pipe   |



0 450 900 1,800 2,700 3,600 Feet

**1 inch = 1,207 feet**

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Development in the Factory Creek hydrologic sub-basin in the Rock Springs Creek watershed includes approx. 300 acres of a mix of single family development, and commercial/institutional development built prior to stormwater regulations. There are only a few stormwater best management practices, such as detention basins, in the area. The project would be to construct a regional detention facility to provide stormwater runoff water quality treatment and volume reduction. Due to the grades of the area and the "stop gap measure" to construct a ditch to drain a portion of the wetland, construction will involve a large amount of earthwork, making project cost a limiting factor for project implementation. Rock Springs Creek drains into the Morgan River, which is impaired by bacteria pollution, a major source being urban runoff. The site is located in Beaufort County on Lady's Island.

County Retrofit Project: Grober Hill M2  
Activity: Regional BMP  
Township: Port Royal Island

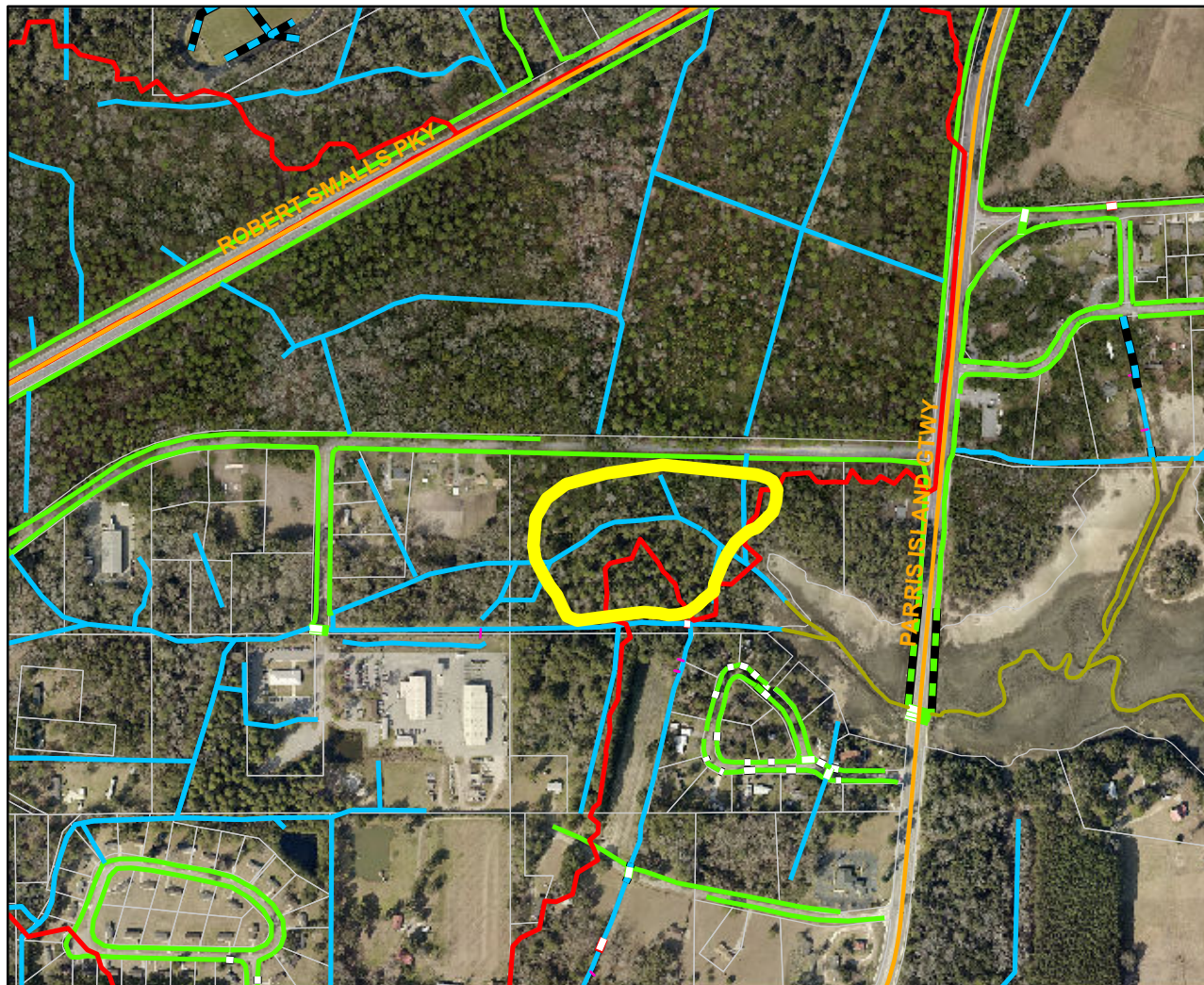
Project Schedule: FY 2018,2020 & 2022

Project Cost: \$2,525,000

\$225,000 (2018))

\$900,000 (2020)

\$1,400,000 (2022)



**Drainage**

**TYPE**

|                          |                  |
|--------------------------|------------------|
| — River                  | — Roadside       |
| — Creek/Stream           | — Roadside Pipe  |
| — River/Creek/Marsh BANK | — Road Pipe      |
| — Channel (fka Outfall)  | — Crossline Pipe |
| — Channel Pipe           | — Driveway Pipe  |
| — Lateral                | — Access Pipe    |
| — Lateral Pipe           | — Bleeder Pipe   |



0 250 500 1,000 1,500 2,000 Feet

1 inch = 667 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Development in the Grober Hill hydrologic sub-basin in the Battery Creek watershed includes approx. 130 acres of single family development built prior to stormwater regulations. There are no stormwater best management practices, such as detention facilities, in the area. The project would be to construct a regional detention facility to provide stormwater runoff water quality treatment and volume reduction. Due to the grades of the area , construction will involve a large amount of earthwork, making project cost a limiting factor for project implementation. Battery Creek is impaired by bacteria pollution, a major source being urban runoff. The site is located in the City of Beaufort.

County Retrofit Project: Camp St. Mary's M2  
Activity: Regional BMP  
Township: Bluffton

Project Schedule: FY 2021-2023

Project Cost: \$3,757,000  
\$342,000 (2021)  
\$165,000 (2022)  
\$3,250,000 (2023)



**Drainage**

**TYPE**

|                          |                  |
|--------------------------|------------------|
| — River                  | — Roadside       |
| — Creek/Stream           | — Roadside Pipe  |
| — River/Creek/Marsh BANK | — Road Pipe      |
| — Channel (fka Outfall)  | — Crossline Pipe |
| — Channel Pipe           | — Driveway Pipe  |
| — Lateral                | — Access Pipe    |
| — Lateral Pipe           | — Bleeder Pipe   |



0 550 1,100 2,200 3,300 4,400 Feet

1 inch = 1,457 feet

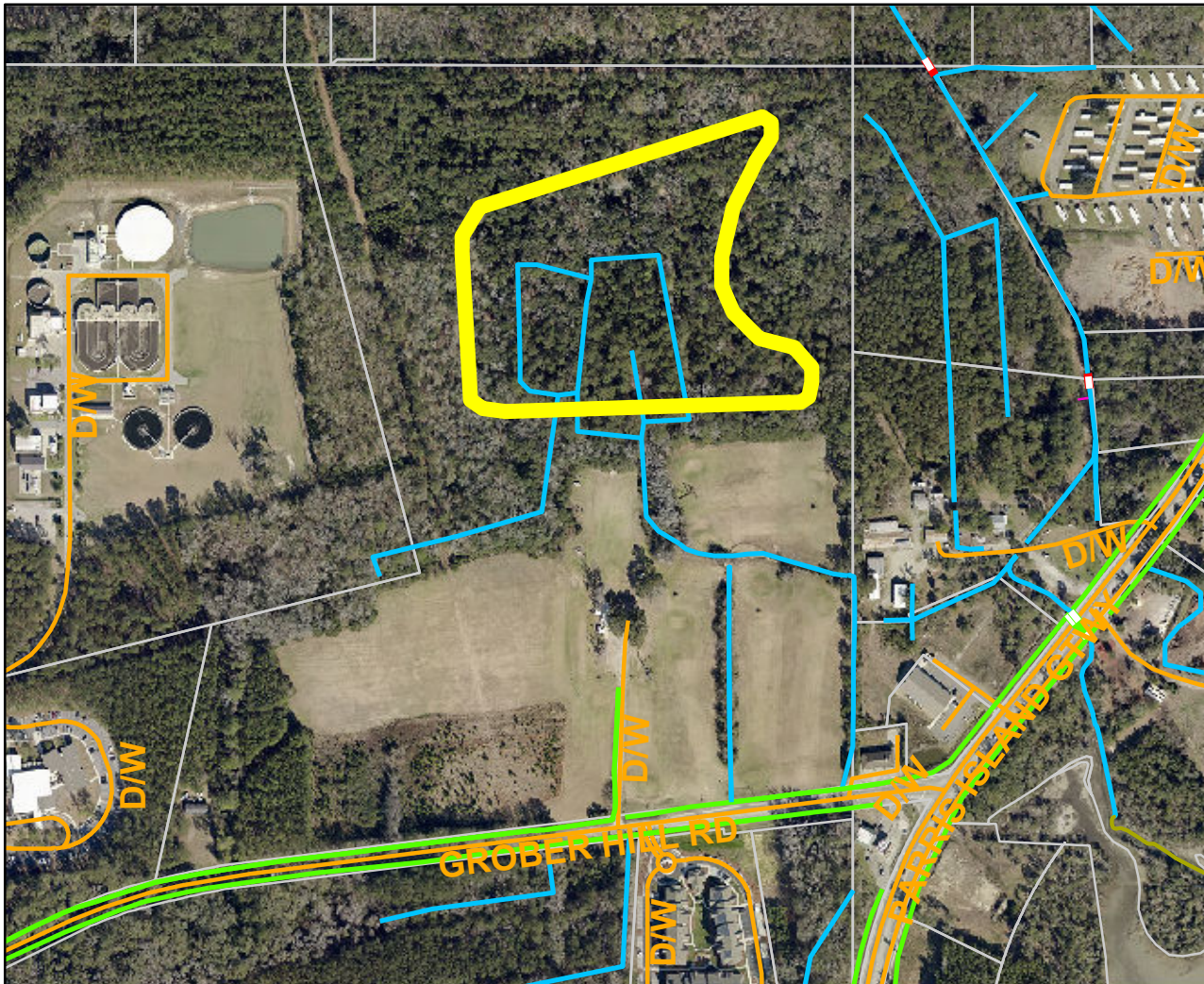
Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Development in the Camp St. Mary hydrologic sub-basin in the Okatie River watershed includes approx. 500 acres of rural and single family development built prior to stormwater regulations. There are no stormwater best management practices, such as detention facilities, in the area. The project would be to construct a regional detention facility to provide stormwater runoff water quality treatment and volume reduction. Due to the presence of multiple wetlands in the area, project design would involve delineation and avoidance of the wetlands, making construction cost a limiting factor for project implementation. Okatie River is impaired by bacteria pollution, a major source being urban runoff. The watershed of the site is located within both Beaufort and Jasper Counties.

**County Retrofit Project: Battery Creek West M1**  
**Activity: Regional BMP**  
**Township: Port Royal Island**

**Project Schedule: FY 2022-2024**

**Project Cost: \$4,140,000**  
**\$375,000 (2022)**  
**\$165,000 (2023)**  
**\$3,600,000 (2024)**



**Drainage**

| TYPE                   |                  |
|------------------------|------------------|
| River                  | — Roadside       |
| Creek/Stream           | — Roadside Pipe  |
| River/Creek/Marsh BANK | — Road Pipe      |
| Channel (fka Outfall)  | — Crossline Pipe |
| Channel Pipe           | — Driveway Pipe  |
| Lateral                | — Access Pipe    |
| Lateral Pipe           | — Bleeder Pipe   |



0 187.5 375 750 1,125 1,500 Feet

**1 inch = 500 feet**

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Development in the Battery Creek West hydrologic sub-basin in the Battery Creek watershed includes approx. 500 acres of a mix of single family development and commercial development built prior to stormwater regulations. There are only a few stormwater best management practices, such as hydrodynamic separators, in the area. The project would be to construct a regional detention facility to provide stormwater runoff water quality treatment and volume reduction. Due to the grades of the area, construction will involve a large amount of earthwork, making project cost a limiting factor for project implementation. Battery Creek is impaired by bacteria pollution, a major source being urban runoff. The site is located in the Town of Port Royal.

# County Retrofit Project: Paige Point Rd Overtopping Design

## Activity: MitigationI BMP

### Township: Sheldon

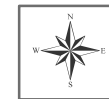
Project Schedule: FY 2023-2024

Project Cost: \$335,000  
\$30,000 (2023)  
\$305,000 (2024)



#### Drainage

| TYPE                   |                  |
|------------------------|------------------|
| River                  | — Roadside       |
| Creek/Stream           | — Roadside Pipe  |
| River/Creek/Marsh BANK | — Road Pipe      |
| Channel (fka Outfall)  | — Crossline Pipe |
| Channel Pipe           | — Driveway Pipe  |
| Lateral                | — Access Pipe    |
| Lateral Pipe           | — Bleeder Pipe   |



0 312.5 625 1,250 1,875 2,500 Feet

1 inch = 833 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 5/19/14

**Description:** Historic complaints about road overtopping support the findings of the 2006 Stormwater Master Plan, which identified this location as a flooding hazard during a 100 - year storm event. A 2013 study by the County confirmed the flooding problem and proposes raising a portion of the road and up-sizing the storm drain under the road.



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



July 2, 2014

**Stormwater Manager's report for the Stormwater Utility Board Meeting**

Utility Update

1. Eric Larson and Danny Polk attended a construction sediment pond class in Charleston. The topics were regulatory requirements, state of the art design, and maintenance practices. I thought it was helpful in not only learning what DHEC expects but also gave us some new concepts to implement on future projects.
2. Larson attended a webinar by US EPA Region 4 on the proposed revised definition of the Waters of the United States. I will be following this closely and making comments because the current interpretation of the proposed rule reads that our tidal ditches which become wet almost every day would be considered jurisdictional waters, requiring USCAE and ORCM permitting for routine maintenance, etc.
3. Larson attended the South Carolina Forest Resources Institute training in Columbia. The sessions had a major focus on green infrastructure, with a tie in to forest preservation as a BMP. It was informative and gave me a new perspective on tree / natural resource protection related to site design. I also gained a better knowledge of the use of trees in engineered BMPs.
4. Danny Polk and S. Stanbery attended the quarterly SCASM meeting. They provided a summary memo on the topics and discussion held. Topics were related to data management, TMDL implementation, and construction SWPPP review.
5. The Stormwater Department currently has 5 positions being advertised. Three are crew positions to fill vacancies, one is related to the new 811 Utility Locate program, and one is related to the new MS4 program.

MS4 Update

1. DHEC and MS4 update – We received the notification letter from DHEC on June 4, 2014. We have 180 days to submit a Notice of Intent (NOI) to be covered by the statewide general permit for MS4. It is my intent to use consulting services to assist in preparing this permit application.
2. We are researching MS4 data management software to aid in record keeping and reporting for the new program. We desire to partner with the SWIC to find a solution that fits the needs of the County as well as the Towns and City. We have demonstrated 3 different products to date with plans to review another next month. We are also considering existing systems being used by the County and Towns / City.

Monitoring Update

1. As part of the MS4 training mentioned above, we learned of new expectations by DHEC regarding MS4 monitoring and TMDL implementation for those streams with impairments. I anticipate significant changes in our monitoring program next year.
2. USCB Lab – Alan Warren reported to me that the ICP training is complete. That completes training on all the new equipment. Lab staff have had recent conversations with DHEC concerning the certification process. Dr. Warren stated the communication with DHEC has been helpful and will make the certification process go more smoothly without issues. The lab has also entered into a MOU with GEL Engineering to provide E. Coli analysis for the Town of Hilton Head Island. GEL does not have the micro capability and GEL's previous contractor could only perform qualitative analysis. Both Dr. Warren and I are excited about the chance to provide services to the Town.

#### Stormwater Implementation Committee (SWIC) report

1. The SWIC did not meet in June. The next meeting is scheduled for July 9.
2. The City of Hardeeville has expressed interest in joining the SWIC and potentially partnering with Beaufort County on stormwater matters.

#### Stormwater related Projects

1. Proposed Carolina Jellyball processing facility in Lobeco and unloading facility on Golden Dock Road in St. Helena Island – Nothing new to report since last month.
2. US 278 at Kitty's Crossing Overtopping issue – Nothing new to report since last month.
3. Infrastructure crew performed on-going maintenance needs. Nothing significant to report.

#### Professional Contracts Report

1. US 278 retrofit ponds – Bid were due June 5, 2014. All bids exceeded the project budget. We are currently considering options to complete, partially or in-whole, the project in-house to stay within budget. More information will be provided when available.
2. County Admin. Complex Retrofit Project – We are still in the process of soliciting proposals from interested contractors.
3. Consultant procurement for the Carolina Jellyball application for the Lebeco site is still on hold pending a submittal from the applicant.
4. A RFP for a stormwater consultant to assist with the setup of the MS4 program is currently being advertised. A pre-submittal meeting was held on June 25.
5. Okatie East BMP monitoring – Ongoing. Nothing new to report since last month.
6. Trask Parkway Overtopping study – I have decided to "table" this project at this time. Due to the widening of the road in recent years, it is believed this project has a much lower priority and the problem may have been resolved. Over time we will continue to observe runoff in the area and see if the problem still exists. Funding will be re-allocated to higher priority projects.
7. SC 170 widening and stormwater – Nothing new to report since last month.
8. Okatie West basin – I am beginning the discussions with property owners to locate a suitable site for a regional stormwater basin. Discussions are being done in conjunction with the Rural and Critical Lands program looking for sites that could potentially serve

both agencies. This project could also become part of, or compliment, the SC 170 stormwater project.

#### Regional Coordination

1. Battery Creek Pond funded by an EPA 319 grant – On going. (Lamar Taylor may report)
2. Stoney Creek watershed plan – On going. According to Kim Jones, the initial site visit for a wetland restoration project within the Stoney Creek sub-basin was conducted on Friday, 6/6/14. ToB is currently working with the consultant team to develop a scope of work under the Master Services Agreement.
3. Salinity Study - On going. Nothing new to report.
4. Sea Level Rise and future planning – On going. Nothing new to report.
5. Drainage issue on H.E. McCracken Circle in Bluffton – The Town of Bluffton Stormwater Department and the County Stormwater Department are working together to find a solution to the road flooding problem near the school. ToB is working on providing BC with wetland mapping, soil borings (for groundwater information), survey data, and pipe sizing for the area. In turn, BC will be supplementing the survey with contours of the proposed basin site, utility location and depth, and providing an engineering study to size pipes, the basin, and verify elevations of existing pipes and ditches.
6. Stormwater Public Education and Outreach – The SWIC is developing a scope of services for a potential educator partner to assist the County with Public Education and Participation as required by the MS4 permit. This scope will be finalized and shared with potential partners this summer or fall in order to “re-start” our educational programs. The work will be cost shared with the Towns and City.

**UNAUDITED AND PRELIMINARY**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF NET ASSETS**  
Stormwater Utility and Capital Improvement Funds  
May 31, 2014 & May 31, 2013

|                                                    | Stormwater Utility<br>Fund<br>May 31, 2014 | Capital Improvements<br>Fund<br>May 31, 2014 | Stormwater Utility<br>Fund<br>May 31, 2013 |
|----------------------------------------------------|--------------------------------------------|----------------------------------------------|--------------------------------------------|
| <b><u>ASSETS</u></b>                               |                                            |                                              |                                            |
| Current Assets                                     |                                            |                                              |                                            |
| Cash and Investments with Trustee                  | \$ 2,070,338                               | \$ 809,813                                   | \$ 2,815,992                               |
| Receivables, Net                                   | 112,983                                    | -                                            | 39,282                                     |
| Inventories                                        | 92,511                                     | -                                            | 102,941                                    |
| Total Current Assets                               | <u>2,275,832</u>                           | <u>809,813</u>                               | <u>2,972,508</u>                           |
| Capital Assets                                     | 2,976,411                                  | -                                            | 2,853,804                                  |
| Accumulated Depreciation                           | <u>(2,162,971)</u>                         | <u>-</u>                                     | <u>(2,080,054)</u>                         |
|                                                    | 813,440                                    | -                                            | 773,750                                    |
| Total Assets                                       | \$ 3,089,272                               | \$ 809,813                                   | \$ 3,746,258                               |
| <b><u>LIABILITIES</u></b>                          |                                            |                                              |                                            |
| Liabilities                                        |                                            |                                              |                                            |
| Account Payable                                    | 24,334                                     | -                                            | 24,524                                     |
| Accrued Payroll                                    | 67,816                                     | -                                            | 59,331                                     |
| Accrued Compensated Absences                       | 6,247                                      | -                                            | 4,470                                      |
| Total Current Liabilities                          | <u>98,397</u>                              | <u>-</u>                                     | <u>88,325</u>                              |
| Long Term Liabilities                              |                                            |                                              |                                            |
| Accrued Compensated Absences                       | 55,379                                     | -                                            | 64,937                                     |
| Net Other Postemployment<br>Benefits Obligation    | <u>839,890</u>                             | <u>-</u>                                     | <u>699,410</u>                             |
| Total Long Term Liabilities                        | 895,269                                    | -                                            | 764,347                                    |
| Total Liabilities                                  | 993,666                                    | -                                            | 852,672                                    |
| <b><u>NET ASSETS</u></b>                           |                                            |                                              |                                            |
| Invested in Capital Assets, Net<br>of Related Debt | 813,440                                    | -                                            | 773,750                                    |
| Reserved for Encumbrances                          | 131,258                                    | -                                            | 265,085                                    |
| Reserved for Capital Improvements                  | -                                          | 809,813                                      | -                                          |
| Unrestricted                                       | <u>1,150,908</u>                           | <u>-</u>                                     | <u>1,854,751</u>                           |
| Total Net Assets                                   | <u>\$ 2,095,606</u>                        | <u>\$ 809,813</u>                            | <u>\$ 2,893,586</u>                        |

**Unaudited and Preliminary**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**  
**Stormwater Utility Fund**  
**For the Period Ended May 31, 2014**

|                                           | Budget<br>FY 2014   | May 31, 2014        | Budget to<br>Actual | Percent<br>of<br>Budget |
|-------------------------------------------|---------------------|---------------------|---------------------|-------------------------|
| Operating Revenues                        |                     |                     |                     |                         |
| Stormwater Utility Fees                   | \$ 3,475,000        | \$ 2,963,098        | (511,902)           | 85%                     |
| Stormwater Utility Project Billings       | 60,023              | 110,272             | 50,249              | 184%                    |
| Total Operating Revenues                  | <u>3,535,023</u>    | <u>3,073,370</u>    | <u>(461,653)</u>    | <u>87%</u>              |
| Operating Expenses                        |                     |                     |                     |                         |
| Personnel                                 | 2,166,552           | 1,745,762           | (420,790)           | 81%                     |
| Purchased Services                        | 956,828             | 490,405             | (466,423)           | 51%                     |
| Supplies                                  | 380,405             | 271,492             | (108,913)           | 71%                     |
| Depreciation                              | 242,119             | 221,947             | (20,172)            | 92%                     |
| Total Operating Expenses                  | <u>3,745,904</u>    | <u>2,729,606</u>    | <u>(1,016,298)</u>  | <u>73%</u>              |
| Operating Income (Loss)                   | (210,881)           | 343,764             | 554,645             | -163%                   |
| Non-Operating Revenues (Expenses)         |                     |                     |                     |                         |
| Gain (Loss) on Sale of Capital Assets     | -                   | (31,113)            | (31,113)            | -100%                   |
| Interest Earned                           | 6,922               | -                   | (6,922)             | 0%                      |
| Total Non-Operating Revenues (Expenses)   | <u>6,922</u>        | <u>(31,113)</u>     | <u>(38,035)</u>     | <u>0%</u>               |
| Transfers Out To Capital Improvement Fund | -                   | 859,705             | 859,705             | 100%                    |
| Change in Net Assets                      | (203,959)           | (547,054)           | (343,095)           | 268%                    |
| Net Assets, Beginning                     | <u>2,642,660</u>    | <u>2,642,660</u>    |                     |                         |
| Net Assets, Ending                        | <u>\$ 2,438,701</u> | <u>\$ 2,095,606</u> | (343,095)           | 86%                     |

**Unaudited and Preliminary**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**  
**Stormwater Capital Improvements Fund**  
**For the Period Ended May 31, 2014**

|                                             | Budget<br>FY 2014 | May 31, 2014 | Budget to<br>Actual | Percent<br>of<br>Budget |
|---------------------------------------------|-------------------|--------------|---------------------|-------------------------|
| Transfers In from Stormwater Utility Fund   |                   |              |                     |                         |
| Administration Complex Parking Lot Retrofit | \$ -              | \$ 329,650   | 329,650             | 100%                    |
| Okatie East Retrofit                        | -                 | 60,237       | 60,237              | 100%                    |
| Highway 278 Retrofit                        | -                 | 222,600      | 222,600             | 100%                    |
| Okatie West Retrofit                        | -                 | 100,000      | 100,000             | 100%                    |
| Upper Battery Creek Retrofit                | -                 | 147,218      | 147,218             | 100%                    |
| Total Transfers In                          | -                 | 859,705      | 859,705             | 100%                    |
| Capital Improvement Expenses                |                   |              |                     |                         |
| Administration Complex Parking Lot Retrofit | -                 | 2,481        | 2,481               | 100%                    |
| Okatie East Retrofit                        | -                 | 17,925       | 17,925              | 100%                    |
| Highway 278 Retrofit                        | -                 | 14,878       | 14,878              | 100%                    |
| Okatie West Retrofit                        | -                 | -            | -                   | 0%                      |
| Upper Battery Creek Retrofit                | -                 | 14,608       | 14,608              | 100%                    |
| Total Operating Expenses                    | -                 | 49,892       | 49,892              | 100%                    |
| Change in Net Assets by Project             |                   |              |                     |                         |
| Administration Complex Parking Lot Retrofit |                   | 327,169      | 327,169             | 100%                    |
| Okatie East Retrofit                        |                   | 42,312       | 42,312              | 100%                    |
| Highway 278 Retrofit                        |                   | 207,722      | 207,722             | 100%                    |
| Okatie West Retrofit                        |                   | 100,000      | 100,000             | 100%                    |
| Upper Battery Creek Retrofit                |                   | 132,610      | 132,610             | 100%                    |
| Total Change in Net Assets by Project       |                   | 809,813      | 809,813             | 100%                    |
| Net Assets, Beginning                       | -                 | -            |                     |                         |
| Net Assets, Ending                          | \$ -              | \$ 809,813   | 809,813             | 100%                    |

**Unaudited and Preliminary**  
**BEAUFORT COUNTY, SOUTH CAROLINA**  
**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**  
**Stormwater Utility Fund**  
**For the Period Ended May 31, 2013**

|                                         | Budget<br>FY 2013   | May 31, 2013        | Budget to<br>Actual | Percent<br>of<br>Budget |
|-----------------------------------------|---------------------|---------------------|---------------------|-------------------------|
| Operating Revenues                      |                     |                     |                     |                         |
| Stormwater Utility Fees                 | \$ 3,469,180        | \$ 2,979,721        | (489,459)           | 86%                     |
| Stormwater Utility Project Billings     | 370,664             | 57,746              | (312,918)           | 16%                     |
| Total Operating Revenues                | <u>3,839,844</u>    | <u>3,037,467</u>    | <u>(802,377)</u>    | <u>79%</u>              |
| Operating Expenses                      |                     |                     |                     |                         |
| Personnel                               | 2,014,323           | 1,671,711           | (342,612)           | 83%                     |
| Purchased Services                      | 1,296,188           | 703,044             | (593,144)           | 54%                     |
| Supplies                                | 426,597             | 263,586             | (163,011)           | 62%                     |
| Depreciation                            | 273,545             | 239,186             | (34,359)            | 87%                     |
| Total Operating Expenses                | <u>4,010,653</u>    | <u>2,877,527</u>    | <u>(1,133,126)</u>  | <u>72%</u>              |
| Operating Income (Loss)                 | (170,809)           | 159,940             | 330,749             | -94%                    |
| Non-Operating Revenues (Expenses)       |                     |                     |                     |                         |
| Interest Earned                         | 11,389              | -                   | (11,389)            | 0%                      |
| Total Non-Operating Revenues (Expenses) | <u>11,389</u>       | <u>-</u>            | <u>(11,389)</u>     | <u>0%</u>               |
| Change in Net Assets                    | (159,420)           | 159,940             | 319,360             | -100%                   |
| Net Assets, Beginning                   | <u>2,733,646</u>    | <u>2,733,646</u>    |                     |                         |
| Net Assets, Ending                      | <u>\$ 2,574,226</u> | <u>\$ 2,893,586</u> | 319,360             | 112%                    |



## MEMORANDUM

Date: July 2, 2014

To: Stormwater Management Utility Board

From: Eddie Bellamy, Public Works Director

Re: **Maintenance Project Report for July 2014**

1. This report will cover seven major and eight minor or routine projects. The Project Summary Reports are attached.

2. Major Projects:

- A. **Scott Hill Road Channel #1**, completed in April on St. Helena Island, District 8; we cleaned out 6,350 feet of channel and one catch basin and jetted out one access pipe, four crossline pipes and 530 feet of roadside pipe. Total cost of the project was **\$19,989**.
- B. **River's End Subdivision**, completed in April in the Okatie area of Bluffton Township, District 9; we cleaned out 2,276 feet of roadside ditch and jetted out 23 driveway pipes, two crossline pipes, one access pipe, and 1,310 feet of roadside pipe on six different roads. Total cost of the project was **\$25,297**.
- C. **Alumni Road**, completed in April on Lady's Island, District 7; we cleaned out 1,879 feet of roadside ditch and jetted out two access pipes, two crossline pipes, and seven driveway pipes. Total cost of the project was **\$18,067**.
- D. **Pine Grove Road**, completed in May in the Burton area of Port Royal Island, District 6; we extended the existing roadside pipe by 100 feet, filled in the existing ditch, installed rip rap and seeded for erosion control. Total cost of the project was **\$17,006**.
- E. **Queens Road**, completed in May on St. Helena Island, District 8; we Shinn cut and constructed 400 feet of workshelf and channel and grubbed, cleared, and constructed another 110 feet of workshelf and channel. We also installed one bleeder pipe, rip rap and hydroseeded for erosion control. Total cost of the project was **\$31,990**.
- F. **Coursen-Tate Memorial Park**, completed in May on Lady's Island, District 7; we installed 1,140 feet of channel pipe, three catch basins, rip rap and hydroseeded for erosion control. Total cost of the project was **\$57,838**.
- G. **Varsity Street**, completed in May on Lady's island, District 7; we cleaned out 2,507 feet of roadside ditch and jetted three crossline pipes and 16 driveway pipes. Total cost of the project was **\$21,337**.

3. Minor or Routine Projects:

- A. **Trask Parkway Channel #1**, completed in April in the Lobeco area of Sheldon Township, District 5; we cleaned out 2,975 feet of channel and 584 feet of lateral ditch and installed a bleeder pipe.
- B. **Old Distant Island Road Channel**, completed in May on Lady's Island, District 7; we Shinn cut and cleaned out 650 feet of channel and removed blockage from the flapgate.
- C. **Huspah Drive**, completed in May in Sheldon Township, District 5; we installed a driveway pipe.
- D. **Community Bible Church Channel**, completed in May in the Burton area, District 6; we repaired a damaged channel pipe.
- E. **Mulrain Road**, completed in May in the Gray's Hill area, District 6; we cleaned out and repaired one catch basin and cleaned out 525 feet of channel.
- F. **Sanders/St. Helena Post Office Channel**, completed in May in District 8; we installed a catch basin and nine feet of channel pipe.
- G. **Polite Drive**, completed in June in Burton, District 6; we cleaned out 864 feet of roadside ditch and hydroseeded for erosion control.
- H. **Okatie East Retrofit (Rework)**, completed in June in Bluffton Township, District 9; we removed blockage from the flowline and repaired a washout caused by overtopping of the emergency overflow.



**Beaufort County**  
**Public Works**  
**Stormwater Infrastructure**  
*Project Summary*

**Project Summary:** Scott Hill Road Channel #1

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** Apr-14

Project improved 6,880 L.F. of drainage system. Cleaned out 6,350 L.F. of channel and (1) catch basin. Jetted (1) access pipe, (4) crossline pipes and 530 L.F. of roadside pipe.

| <b>2014-598 / Scott Hill Road Channel #1</b>               | <b>Labor<br/>Hours</b> | <b>Labor<br/>Cost</b> | <b>Equipment<br/>Cost</b> | <b>Material<br/>Cost</b> | <b>Contractor<br/>Cost</b> | <b>Indirect<br/>Labor</b> | <b>Total Cost</b>      |
|------------------------------------------------------------|------------------------|-----------------------|---------------------------|--------------------------|----------------------------|---------------------------|------------------------|
| APJT / Access pipe - jetted                                | 10.0                   | \$216.28              | \$110.80                  | \$52.36                  | \$0.00                     | \$143.40                  | \$522.84               |
| AUDIT / Audit Project                                      | 1.0                    | \$20.46               | \$0.00                    | \$0.00                   | \$0.00                     | \$13.23                   | \$33.69                |
| CLPJT / Crossline Pipe - Jetted                            | 20.0                   | \$432.58              | \$288.60                  | \$110.36                 | \$0.00                     | \$286.80                  | \$1,118.34             |
| HAUL / Hauling                                             | 84.0                   | \$1,812.21            | \$898.80                  | \$548.96                 | \$0.00                     | \$1,217.43                | \$4,477.40             |
| ODCO / Outfall ditch - cleaned out                         | 247.0                  | \$5,388.67            | \$2,099.61                | \$651.86                 | \$0.00                     | \$3,173.78                | \$11,313.91            |
| ONJV / Onsite Job Visit                                    | 26.0                   | \$839.30              | \$101.36                  | \$90.83                  | \$0.00                     | \$592.54                  | \$1,624.03             |
| WSL / Workshelf - Level                                    | 20.0                   | \$420.88              | \$119.80                  | \$94.09                  | \$0.00                     | \$264.60                  | \$899.36               |
| <b>2014-598 / Scott Hill Road Channel #1<br/>Sub Total</b> | <b>408.0</b>           | <b>\$9,130.38</b>     | <b>\$3,618.97</b>         | <b>\$1,548.45</b>        | <b>\$0.00</b>              | <b>\$5,691.78</b>         | <b>\$19,989.58</b>     |
| <br><b>Grand Total</b>                                     | <br><b>408.0</b>       | <br><b>\$9,130.38</b> | <br><b>\$3,618.97</b>     | <br><b>\$1,548.45</b>    | <br><b>\$0.00</b>          | <br><b>\$5,691.78</b>     | <br><b>\$19,989.58</b> |

Before



During



After



**Project: Scott Hill  
Road Channel #1  
Map 1**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-598**

**Township: St.  
Helena Island**

**Completed:  
April 2014**

**Legend**

**TYPE**

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe



0 150 300 600 900 1,200  
Feet

**1 inch = 576 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 4/29/14

File: C:/sethdata/projects/projectmaps/Scott Hill Rd Ch1 2014-598 Map1



**Project: Scott Hill  
Road Channel #1  
Map 2**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-598**

**Township: St.  
Helena Island**

**Completed:  
April 2014**

#### **Legend**

##### **TYPE**

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe

0 20 40 80 120 160  
Feet

**1 inch = 87 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 4/29/14

File: C:/sethdata/projects/projectmaps/Scott Hill Rd Ch1 2014-598 Map2

**Project: Scott Hill  
Road Channel #1  
Map 3**

**Activity: Vacuum  
Truck**

**Project #:  
2014-598**

**Township: St.  
Helena Island**

**Completed:  
April 2014**

**Legend**

 Catch Basin

**TYPE**

 River

 Creek/Stream

 River/Creek/Marsh BANK

 Channel (fka Outfall)

 Channel Pipe

 Lateral

 Lateral Pipe

 Roadside

 Roadside Pipe

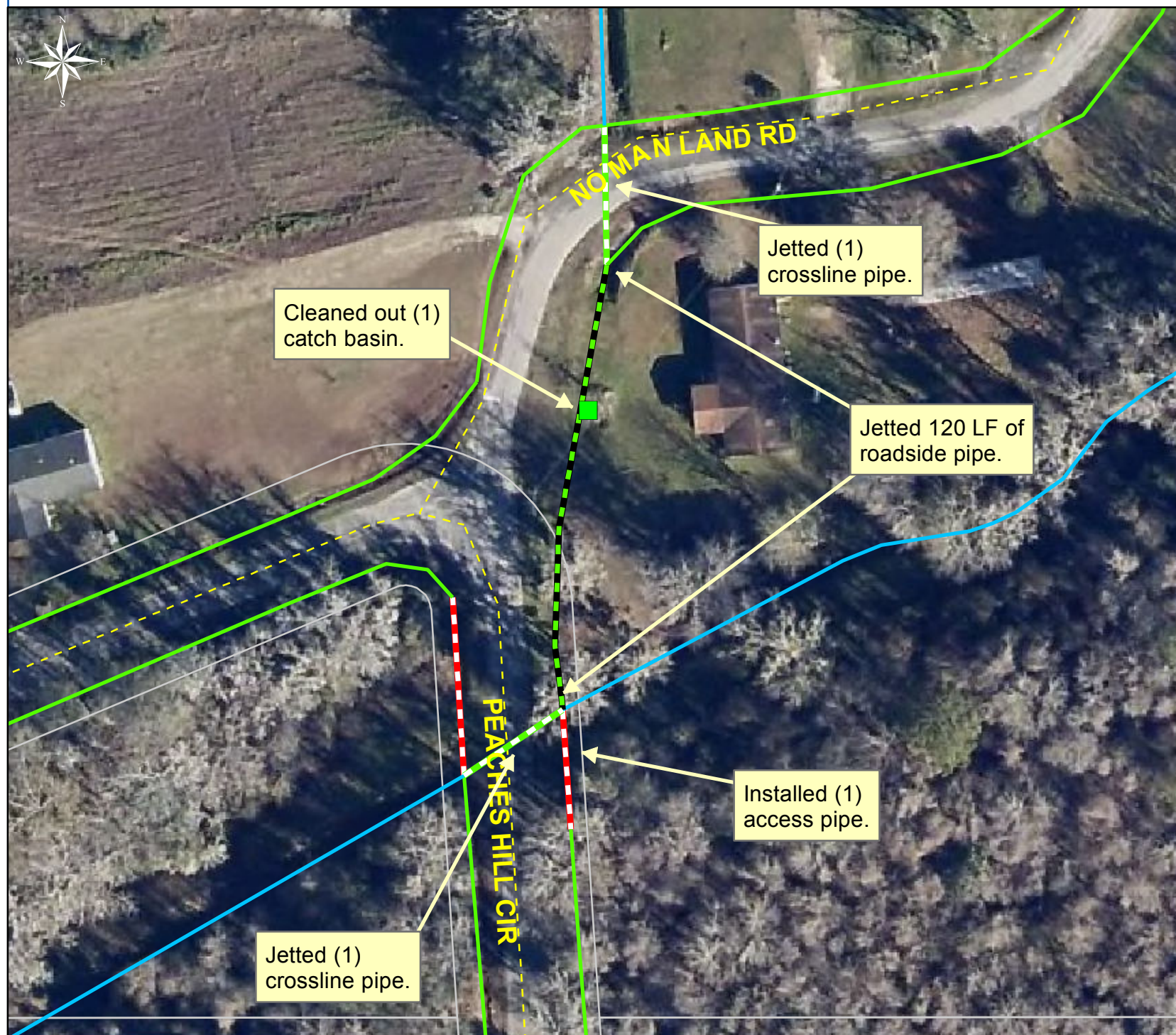
 Road Pipe

 Crossline Pipe

 Driveway Pipe

 Access Pipe

 Bleeder Pipe



0 15 30 60 90 120  
Feet

1 inch = 63 feet

Prepared By: BC Stormwater Management Utility

Date Print: 4/29/14

File: C:/sethdata/projects/projectmaps/Scott Hill Rd Ch1 2014-598 Map3

**Project: Scott Hill  
Road Channel #1  
Map 4**

**Activity: Vacuum  
Truck**

**Project #:  
2014-598**

**Township: St.  
Helena Island**

**Completed:  
April 2014**



**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 50 100 200 300 400  
Feet

**1 inch = 192 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 4/29/14

File: C:/sethdata/projects/projectmaps/Scott Hill Rd Ch1 2014-598 Map4

**Project: Scott Hill  
Road Channel #1  
Map 5**

**Activity: Vacuum  
Truck**

**Project #:  
2014-598**

**Township: St.  
Helena Island**

**Completed:  
April 2014**

**Legend**

**TYPE**

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe

Jetted (2)  
crossline pipes.

0 15 30 60 90 120  
Feet

1 inch = 58 feet

Prepared By: BC Stormwater Management Utility

Date Print: 4/29/14

File: C:/sethdata/projects/projectmaps/Scott Hill Rd Ch1 2014-598 Map5



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Rivers End Subdivision - Rivers End Drive, Parrot Creek Drive, Otter Creek Drive, Edisto Court, Capers Creek Drive and Archers Creek Court

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** Apr-14

Project improved 3,577 L.F. of drainage system. Cleaned out 2,267 L.F. of roadside ditch. Jetted (23) driveway pipes, (2) crossline pipes, (1) access pipe and 1,310 L.F. of roadside pipe.

| <b>2014-601 / Rivers End Subdivision</b>               | <b>Labor<br/>Hours</b> | <b>Labor<br/>Cost</b>  | <b>Equipment<br/>Cost</b> | <b>Material<br/>Cost</b> | <b>Contractor<br/>Cost</b> | <b>Indirect<br/>Labor</b> | <b>Total Cost</b>      |
|--------------------------------------------------------|------------------------|------------------------|---------------------------|--------------------------|----------------------------|---------------------------|------------------------|
| AUDIT / Audit Project                                  | 0.5                    | \$10.23                | \$0.00                    | \$0.00                   | \$0.00                     | \$6.62                    | \$16.85                |
| DLO / Ditch Layout                                     | 20.0                   | \$422.15               | \$18.10                   | \$12.42                  | \$0.00                     | \$277.60                  | \$730.27               |
| DPJT / Driveway Pipe - Jetted                          | 40.0                   | \$865.12               | \$443.20                  | \$217.28                 | \$0.00                     | \$573.60                  | \$2,099.20             |
| HAUL / Hauling                                         | 86.0                   | \$1,889.80             | \$920.20                  | \$457.52                 | \$0.00                     | \$1,257.66                | \$4,525.18             |
| ONJV / Onsite Job Visit                                | 27.0                   | \$845.76               | \$97.74                   | \$74.42                  | \$0.00                     | \$567.09                  | \$1,585.01             |
| PRRECON / Project Reconnaissance                       | 4.0                    | \$84.43                | \$3.62                    | \$6.88                   | \$0.00                     | \$55.52                   | \$150.45               |
| RSDCL / Roadside Ditch - Cleanout                      | 200.0                  | \$4,183.70             | \$510.66                  | \$179.41                 | \$0.00                     | \$2,363.30                | \$7,237.07             |
| UTLOC / Utility locates                                | 1.0                    | \$20.46                | \$0.00                    | \$0.00                   | \$0.00                     | \$13.23                   | \$33.69                |
| <b>2014-601 / Rivers End Subdivision<br/>Sub Total</b> | <b>378.5</b>           | <b>\$8,321.65</b>      | <b>\$1,993.52</b>         | <b>\$947.93</b>          | <b>\$0.00</b>              | <b>\$5,114.61</b>         | <b>\$16,377.71</b>     |
| <br><b>Grand Total</b>                                 | <br><b>482.0</b>       | <br><b>\$11,275.95</b> | <br><b>\$2,740.32</b>     | <br><b>\$2,621.25</b>    | <br><b>\$1,180.87</b>      | <br><b>\$7,478.71</b>     | <br><b>\$25,297.10</b> |

Before



During



After



# Project: Rivers End Subdivision Map 1

Activity: Routine/  
Preventive  
Maintenance

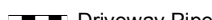
Project #:  
2014-601

Township:  
Bluffton

Completed:  
April 2014

## Legend

### TYPE

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe



0 30 60 120 180 240  
Feet

1 inch = 121 feet

Prepared By: BC Stormwater Management Utility

Date Print: 5/20/14

File: C:/sethdata/projects/projectmaps/Rivers End SD 2014-601 Map1

**Project: Rivers  
End Subdivision  
Map 2**

**Activity: Routine/  
Preventive  
Maintenance**

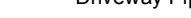
**Project #:  
2014-601**

**Township:  
Bluffton**

**Completed:  
April 2014**

**Legend**

**TYPE**

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe



0 30 60 120 180 240  
Feet

**1 inch = 121 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 5/15/14

File: C:/sethdata/projects/projectmaps/Rivers End SD 2014-601 Map2

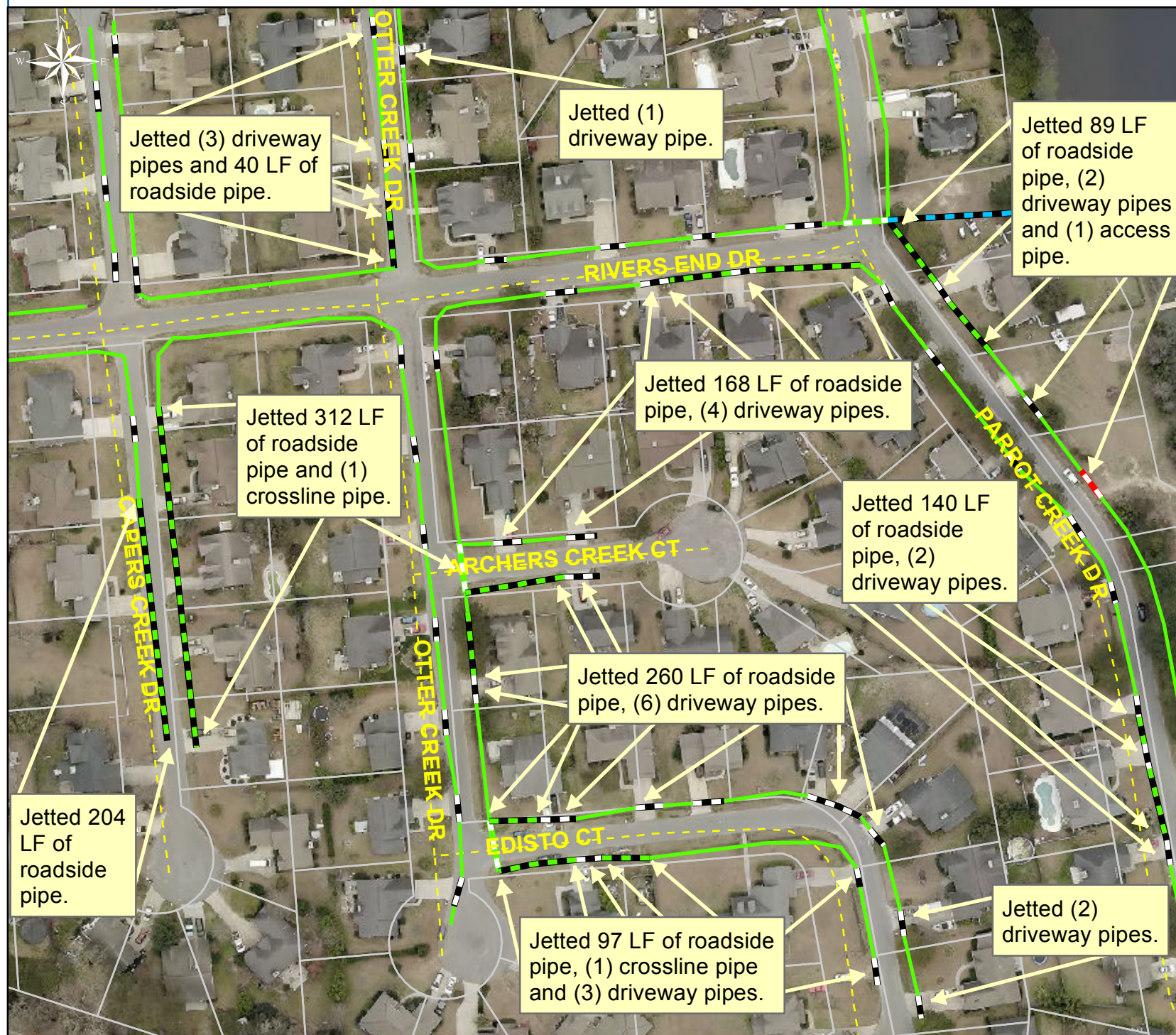
# Project: Rivers End Subdivision Map 3

Activity: Vacuum Truck

Project #: 2014-601

Township: Bluffton

Completed: April 2014



## Legend

### TYPE

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 30 60 120 180 240 Feet

1 inch = 121 feet

Prepared By: BC Stormwater Management Utility

Date Print: 5/20/14

File: C:\sethdata\projects\projectmaps\Vac\Rivers End SD 2014-601 Map3



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Alumni Road

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** Apr-14

Project improved 1,879 L.F. of drainage system. Cleaned out 1,879 L.F. of roadside ditch. Jetted (2) access pipes, (2) crossline pipes and (7) driveway pipes.

| 2014-614 / Alumni Road                      | Labor<br>Hours | Labor<br>Cost     | Equipment<br>Cost | Material<br>Cost | Contractor<br>Cost | Indirect<br>Labor | Total Cost         |
|---------------------------------------------|----------------|-------------------|-------------------|------------------|--------------------|-------------------|--------------------|
| AUDIT / Audit Project                       | 0.5            | \$10.23           | \$0.00            | \$0.00           | \$0.00             | \$6.62            | \$16.85            |
| DPJT / Driveway Pipe - Jetted               | 20.0           | \$432.56          | \$221.60          | \$91.90          | \$0.00             | \$286.80          | \$1,032.86         |
| HAUL / Hauling                              | 74.0           | \$1,635.87        | \$791.80          | \$321.30         | \$0.00             | \$1,060.26        | \$3,809.23         |
| ONJV / Onsite Job Visit                     | 13.0           | \$442.43          | \$47.06           | \$55.26          | \$0.00             | \$327.60          | \$872.35           |
| RSDCL / Roadside Ditch - Cleanout           | 297.0          | \$6,188.47        | \$1,213.36        | \$316.71         | \$0.00             | \$4,002.33        | \$11,720.87        |
| TC / Traffic Control - Jobsite              | 15.0           | \$331.60          | \$18.10           | \$10.20          | \$0.00             | \$220.80          | \$580.70           |
| UTLOC / Utility locates                     | 1.0            | \$20.46           | \$0.00            | \$0.00           | \$0.00             | \$13.23           | \$33.69            |
| <b>2014-614 / Alumni Road<br/>Sub Total</b> | <b>420.5</b>   | <b>\$9,061.62</b> | <b>\$2,291.92</b> | <b>\$795.37</b>  | <b>\$0.00</b>      | <b>\$5,917.63</b> | <b>\$18,066.54</b> |
| <br><b>Grand Total</b>                      | <b>420.5</b>   | <b>\$9,061.62</b> | <b>\$2,291.92</b> | <b>\$795.37</b>  | <b>\$0.00</b>      | <b>\$5,917.63</b> | <b>\$18,066.54</b> |

Before



During



After



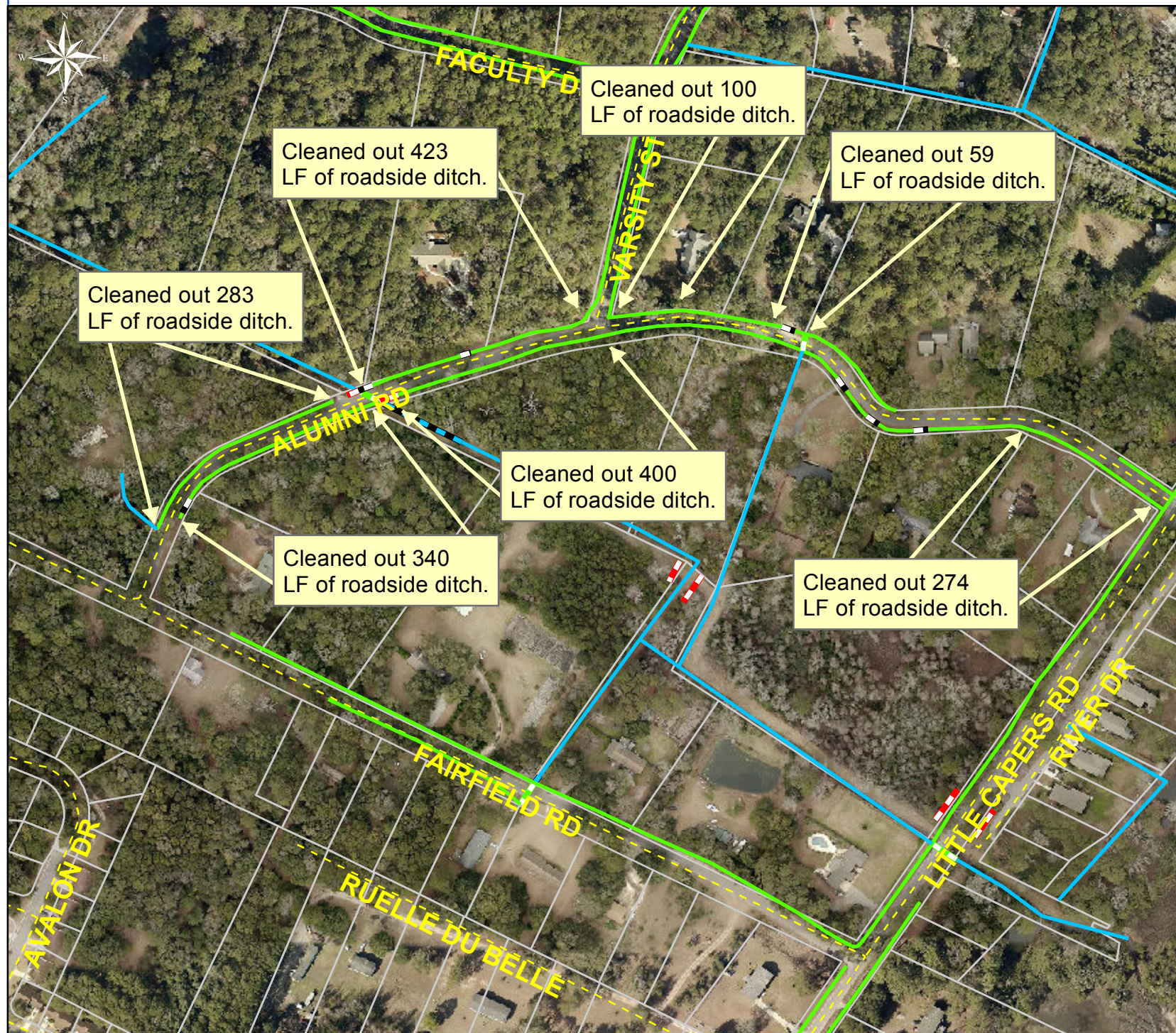
# Project: Alumni Road Map 1

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2014-625

Township: Lady's  
Island

Completed:  
May 2014



## Legend

### TYPE

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 70 140 280 420 560  
Feet

1 inch = 271 feet

Prepared By: BC Stormwater Management Utility

Date Print: 6/16/14

File:C:/sethdata/projects/projectmaps/Alumni Rd 201-625 Map1

**Project: Alumni  
Road Map 2**

**Activity: Vacuum  
Truck**

**Project #:  
2014-625**

**Township: Lady's  
Island**

**Completed:  
May 2014**



**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 70 140 280 420 560  
Feet

**1 inch = 271 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 6/16/14

File: C:\sethdata\projects\projectmaps\Vac\Alumni Rd 201-625 Map2



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Pine Grove Road

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** May-14

Project improved 100 L.F. of drainage system. Extended 100 L.F. of existing roadside pipe. Installed rip rap, handseeded and hydroseeded for erosion control.

| 2013-644 / Pine Grove Road         | Labor<br>Hours | Labor<br>Cost     | Equipment<br>Cost | Material<br>Cost  | Contractor<br>Cost | Indirect<br>Labor | Total Cost         |
|------------------------------------|----------------|-------------------|-------------------|-------------------|--------------------|-------------------|--------------------|
| AUDIT / Audit Project              | 0.5            | \$10.23           | \$0.00            | \$0.00            | \$0.00             | \$6.62            | \$16.85            |
| HAUL / Hauling                     | 65.0           | \$1,439.99        | \$695.50          | \$1,779.79        | \$0.00             | \$963.54          | \$4,878.82         |
| HYDR / Hydroseeding                | 79.0           | \$1,650.20        | \$315.04          | \$190.21          | \$0.00             | \$1,008.36        | \$3,163.81         |
| ONJV / Onsite Job Visit            | 29.0           | \$886.47          | \$104.98          | \$5.82            | \$0.00             | \$556.88          | \$1,554.15         |
| PI / Project Inspection            | 2.0            | \$88.54           | \$7.24            | \$5.82            | \$0.00             | \$67.92           | \$169.52           |
| PRRECON / Project Reconnaissance   | 1.0            | \$40.23           | \$4.02            | \$3.10            | \$0.00             | \$33.96           | \$81.31            |
| RB / Remove blockage from flowline | 30.0           | \$639.08          | \$198.29          | \$0.00            | \$0.00             | \$291.75          | \$1,129.12         |
| RPWO / Repaired Washout            | 6.0            | \$146.24          | \$36.48           | \$9.65            | \$0.00             | \$98.46           | \$290.83           |
| RSPI / Roadside Pipe - Installed   | 70.0           | \$1,469.68        | \$525.00          | \$2,793.92        | \$0.00             | \$899.70          | \$5,688.29         |
| UTLOC / Utility locates            | 1.0            | \$20.46           | \$0.00            | \$0.00            | \$0.00             | \$13.23           | \$33.69            |
| <b>2013-644 / Pine Grove Road</b>  | <b>283.5</b>   | <b>\$6,391.12</b> | <b>\$1,886.55</b> | <b>\$4,788.31</b> | <b>\$0.00</b>      | <b>\$3,940.42</b> | <b>\$17,006.39</b> |
| <b>Sub Total</b>                   |                |                   |                   |                   |                    |                   |                    |
| <b>Grand Total</b>                 | <b>283.5</b>   | <b>\$6,391.12</b> | <b>\$1,886.55</b> | <b>\$4,788.31</b> | <b>\$0.00</b>      | <b>\$3,940.42</b> | <b>\$17,006.39</b> |

Before



During



After



**Project: Pine Grove Road**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2013-644**

**Township: Port  
Royal Island**

**Completed:  
May 2014**



**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 45 90 180 270 360  
Feet

1 inch = 180 feet

Prepared By: BC Stormwater Management Utility

Date Print: 6/4/14

File: C:/sethdata/projects/projectmaps/Pine Grove Rd 2013-644



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Queens Road

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** May-14

Project improved 510 L.F. of drainage system. Shinn cut and constructed 400 L.F. of channel and workshelf. Grubbed, cleared and constructed 110 L.F. of workshelf. Installed (1) bleeder pipe, rip rap and hydroseeded for erosion control.

| 2014-001 / Queens Road              | Labor<br>Hours | Labor<br>Cost      | Equipment<br>Cost | Material<br>Cost  | Contractor<br>Cost | Indirect<br>Labor | Total Cost         |
|-------------------------------------|----------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------------|
| AUDIT / Audit Project               | 1.0            | \$20.46            | \$0.00            | \$0.00            | \$0.00             | \$13.23           | \$33.69            |
| BPINST / Bleeder pipe - Installed   | 24.0           | \$530.56           | \$429.92          | \$161.57          | \$0.00             | \$353.28          | \$1,475.33         |
| EDO / Equipment Drop Off            | 35.0           | \$783.10           | \$209.40          | \$26.96           | \$0.00             | \$401.85          | \$1,421.31         |
| HAUL / Hauling                      | 76.5           | \$1,678.20         | \$818.55          | \$1,316.01        | \$0.00             | \$1,075.01        | \$4,887.77         |
| HYDR / Hydroseeding                 | 24.0           | \$530.56           | \$135.84          | \$352.51          | \$0.00             | \$353.28          | \$1,372.19         |
| LM / Loading Materials              | 48.0           | \$1,061.12         | \$416.60          | \$80.88           | \$0.00             | \$706.56          | \$2,265.16         |
| MEET / Meetings                     | 2.0            | \$88.54            | \$7.24            | \$9.00            | \$0.00             | \$67.92           | \$172.70           |
| ODCON / Outfall ditch - constructed | 79.0           | \$1,701.20         | \$592.90          | \$143.43          | \$0.00             | \$1,061.67        | \$3,499.20         |
| OFDI / Outfall Ditch - Inspection   | 1.0            | \$44.27            | \$3.62            | \$3.00            | \$0.00             | \$33.96           | \$84.85            |
| ONJV / Onsite Job Visit             | 48.0           | \$1,641.28         | \$181.80          | \$180.00          | \$0.00             | \$1,175.60        | \$3,178.68         |
| PI / Project Inspection             | 6.0            | \$265.62           | \$21.72           | \$24.00           | \$0.00             | \$203.76          | \$515.10           |
| PL / Project Layout                 | 4.0            | \$177.08           | \$14.48           | \$9.00            | \$0.00             | \$135.84          | \$336.40           |
| PROFS / Professional Services       | 0.0            | \$0.00             | \$0.00            | \$0.00            | \$625.00           | \$0.00            | \$625.00           |
| RMTRD / Remove trees - Ditch        | 64.0           | \$1,369.60         | \$643.46          | \$149.97          | \$0.00             | \$706.56          | \$2,869.59         |
| RMTRW / Remove trees - Workshelf    | 45.8           | \$980.37           | \$157.18          | \$31.48           | \$0.00             | \$524.52          | \$1,693.55         |
| STAGING / Staging Materials         | 10.0           | \$236.12           | \$83.76           | \$53.92           | \$0.00             | \$160.74          | \$534.54           |
| STBY / Stand By                     | 5.0            | \$108.15           | \$53.50           | \$23.59           | \$0.00             | \$72.10           | \$257.34           |
| WSCON / Workshelf - Constructed     | 53.0           | \$1,163.14         | \$429.64          | \$81.66           | \$0.00             | \$589.71          | \$2,264.15         |
| WSL / Workshelf - Level             | 24.0           | \$530.56           | \$267.52          | \$58.98           | \$0.00             | \$353.28          | \$1,210.34         |
| WSSHN / Workshelf - Shinn cut       | 66.0           | \$1,444.38         | \$679.35          | \$454.05          | \$0.00             | \$715.32          | \$3,293.10         |
| <b>2014-001 / Queens Road</b>       | <b>616.3</b>   | <b>\$14,354.31</b> | <b>\$5,146.48</b> | <b>\$3,160.00</b> | <b>\$625.00</b>    | <b>\$8,704.18</b> | <b>\$31,989.97</b> |
| <b>Sub Total</b>                    |                |                    |                   |                   |                    |                   |                    |
| <b>Grand Total</b>                  | <b>616.3</b>   | <b>\$14,354.31</b> | <b>\$5,146.48</b> | <b>\$3,160.00</b> | <b>\$625.00</b>    | <b>\$8,704.18</b> | <b>\$31,989.97</b> |

Before



During



After



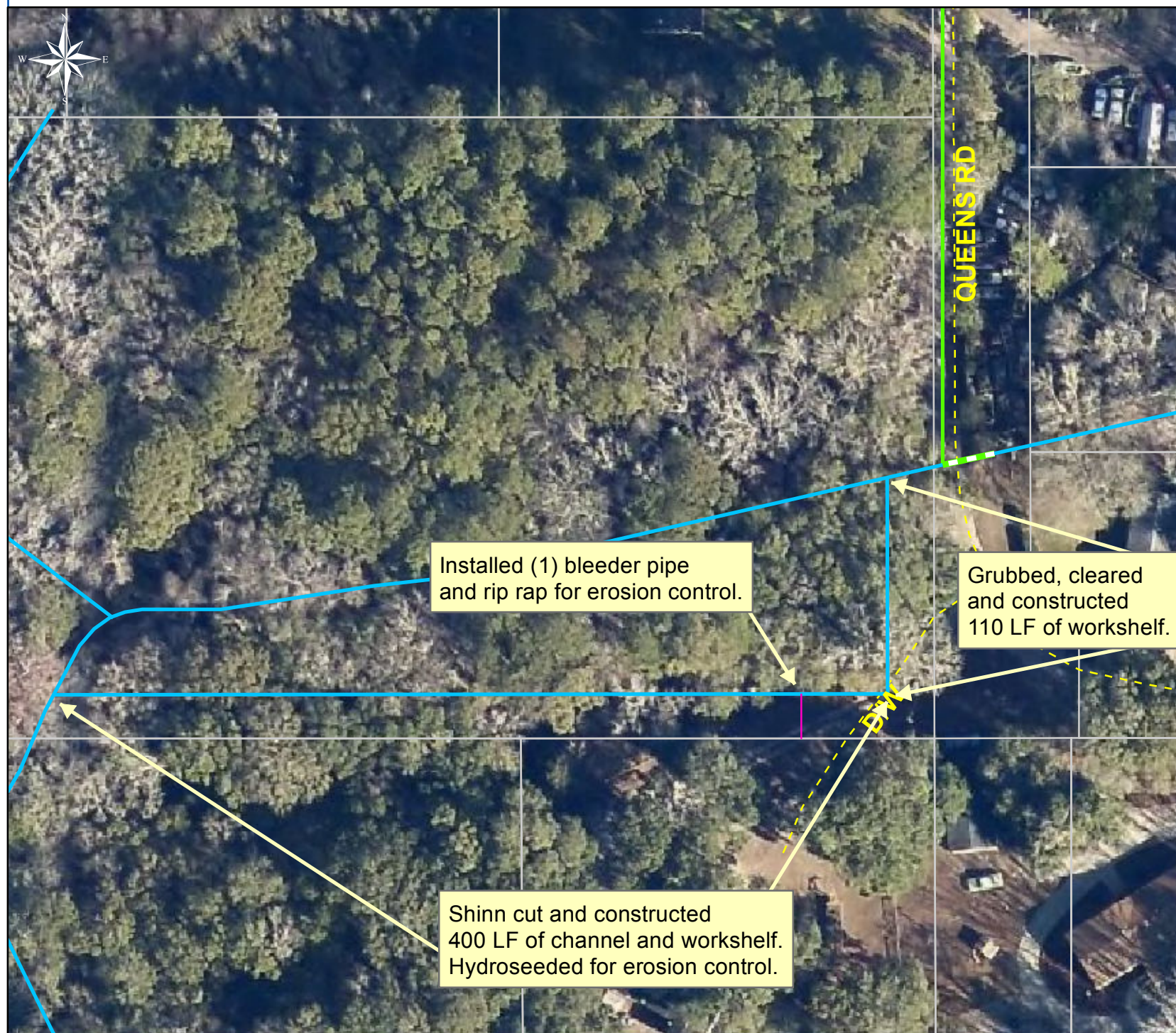
**Project: Queens Road**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-001**

**Township: St.  
Helena Island**

**Completed:  
May 2014**



**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 15 30 60 90 120  
Feet

**1 inch = 71 feet**

Prepared By: BC Stormwater Management Utility  
Date Print: 6/17/14

File:C:/sethdata/projects/projectmaps/Queens Rd 2014-001



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Coursen-Tate Memorial Park

**Activity:** Drainage Improvement

**Narrative Description of Project:**

Project improved 1,140 L.F. of drainage system. Installed (3) catch basins, 1,140 L.F. of channel pipe, rip rap and hydroseeded for erosion control.

**Completion:** May-14

| 2014-003 / Coursen Tate Memorial Park                  | Labor Hours  | Labor Cost         | Equipment Cost    | Material Cost      | Contractor Cost | Indirect Labor     | Total Cost         |
|--------------------------------------------------------|--------------|--------------------|-------------------|--------------------|-----------------|--------------------|--------------------|
| AUDIT / Audit Project                                  | 1.0          | \$20.46            | \$0.00            | \$0.00             | \$0.00          | \$13.23            | \$33.69            |
| BKFILL / Back Fill                                     | 25.0         | \$540.75           | \$262.60          | \$143.50           | \$0.00          | \$360.50           | \$1,307.35         |
| HAUL / Hauling                                         | 230.3        | \$5,154.12         | \$2,415.46        | \$3,951.59         | \$0.00          | \$3,339.56         | \$14,860.72        |
| HYDR / Hydroseeding                                    | 24.0         | \$548.94           | \$80.76           | \$561.57           | \$0.00          | \$363.78           | \$1,555.05         |
| OFPI / Outfall Pipe - Installation                     | 312.0        | \$6,898.59         | \$1,623.12        | \$12,775.13        | \$0.00          | \$4,531.01         | \$25,827.86        |
| ONJV / Onsite Job Visit                                | 42.0         | \$1,444.21         | \$152.84          | \$86.40            | \$0.00          | \$976.39           | \$2,659.84         |
| PI / Project Inspection                                | 17.8         | \$367.37           | \$10.86           | \$12.00            | \$0.00          | \$249.01           | \$639.23           |
| PP / Project Preparation                               | 40.0         | \$923.76           | \$220.32          | \$39.97            | \$0.00          | \$592.56           | \$1,776.61         |
| RMTRW / Remove trees - Workshelf                       | 12.0         | \$298.20           | \$57.28           | \$29.22            | \$0.00          | \$194.52           | \$579.22           |
| RPWO / Repaired Washout                                | 10.0         | \$216.30           | \$58.20           | \$37.07            | \$0.00          | \$144.20           | \$455.77           |
| RRI / Rip Rap - Installed                              | 79.5         | \$1,734.67         | \$316.00          | \$60.77            | \$0.00          | \$988.49           | \$3,099.92         |
| SC / Sediment Control                                  | 50.0         | \$1,058.10         | \$36.20           | \$28.46            | \$0.00          | \$696.00           | \$1,818.76         |
| SODW / Sod - Watered                                   | 2.0          | \$47.96            | \$44.32           | \$20.72            | \$0.00          | \$32.94            | \$145.94           |
| STAGING / Staging Materials                            | 21.0         | \$449.63           | \$43.72           | \$29.61            | \$0.00          | \$235.22           | \$758.18           |
| WSDR / Workshelf - Dressed                             | 43.5         | \$995.37           | \$123.92          | \$73.94            | \$0.00          | \$635.30           | \$1,828.53         |
| WSL / Workshelf - Level                                | 10.0         | \$216.30           | \$80.20           | \$50.55            | \$0.00          | \$144.20           | \$491.25           |
| <b>2014-003 / Coursen Tate Memorial Park Sub Total</b> | <b>920.0</b> | <b>\$20,914.73</b> | <b>\$5,525.80</b> | <b>\$17,900.50</b> | <b>\$0.00</b>   | <b>\$13,496.89</b> | <b>\$57,837.92</b> |
| <b>Grand Total</b>                                     | <b>920.0</b> | <b>\$20,914.73</b> | <b>\$5,525.80</b> | <b>\$17,900.50</b> | <b>\$0.00</b>   | <b>\$13,496.89</b> | <b>\$57,837.92</b> |

Before



During



After



**Project: Coursen & Tate Memorial Park**

**Activity: Drainage Improvement**

**Project #:  
2014-003**

**Township: Lady's Island**

**Completed:  
May 2014**



**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 55 110 220 330 440  
Feet

**1 inch = 208 feet**

Prepared By: BC Stormwater Management Utility  
Date Print: 6/19/14

File: C:/sethdata/projects/projectmaps/Coursen&Tate Park 2014-003



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Varsity Street

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** May-14

Project improved 2,507 L.F. of drainage system. Cleaned out 2,507 L.F. of roadside ditch. Jetted (3) crossline pipes and pipes and (16) driveway pipes.

| 2014-621 / Varsity Street         | Labor<br>Hours | Labor<br>Cost      | Equipment<br>Cost | Material<br>Cost  | Contractor<br>Cost | Indirect<br>Labor | Total Cost         |
|-----------------------------------|----------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------------|
| AUDIT / Audit Project             | 0.5            | \$10.23            | \$0.00            | \$0.00            | \$0.00             | \$6.62            | \$16.85            |
| DPJT / Driveway Pipe - Jetted     | 44.0           | \$951.63           | \$487.52          | \$252.76          | \$0.00             | \$630.96          | \$2,322.87         |
| HAUL / Hauling                    | 68.5           | \$1,481.66         | \$732.95          | \$360.59          | \$0.00             | \$959.04          | \$3,534.24         |
| ONJV / Onsite Job Visit           | 38.0           | \$1,260.71         | \$137.56          | \$90.00           | \$0.00             | \$895.93          | \$2,384.20         |
| RSDCL / Roadside Ditch - Cleanout | 336.0          | \$7,058.42         | \$976.00          | \$338.53          | \$0.00             | \$4,705.92        | \$13,078.87        |
| <b>2014-621 / Varsity Street</b>  | <b>487.0</b>   | <b>\$10,762.65</b> | <b>\$2,334.03</b> | <b>\$1,041.88</b> | <b>\$0.00</b>      | <b>\$7,198.46</b> | <b>\$21,337.02</b> |
| <b>Sub Total</b>                  |                |                    |                   |                   |                    |                   |                    |
| <br><b>Grand Total</b>            | <b>487.0</b>   | <b>\$10,762.65</b> | <b>\$2,334.03</b> | <b>\$1,041.88</b> | <b>\$0.00</b>      | <b>\$7,198.46</b> | <b>\$21,337.02</b> |

Before



During



After



**Project: Varsity  
Street Channel #1  
Map 1**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-621**

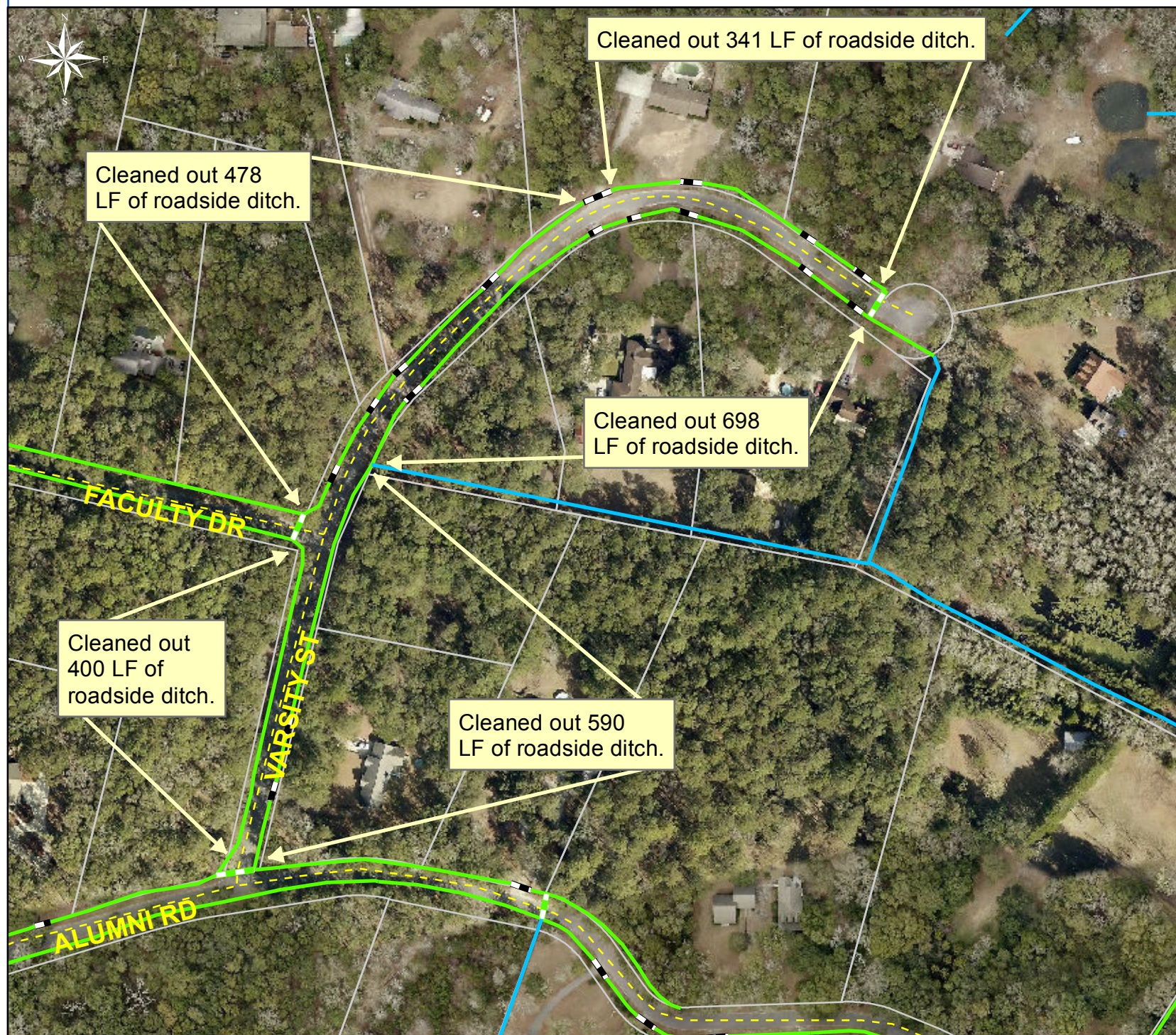
**Township: Lady's  
Island**

**Completed:  
May 2014**

**Legend**

**TYPE**

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe



0 45 90 180 270 360  
Feet

**1 inch = 183 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 6/16/14

File: C:/sethdata/projects/projectmaps/Varsity St 2014-621 Map1

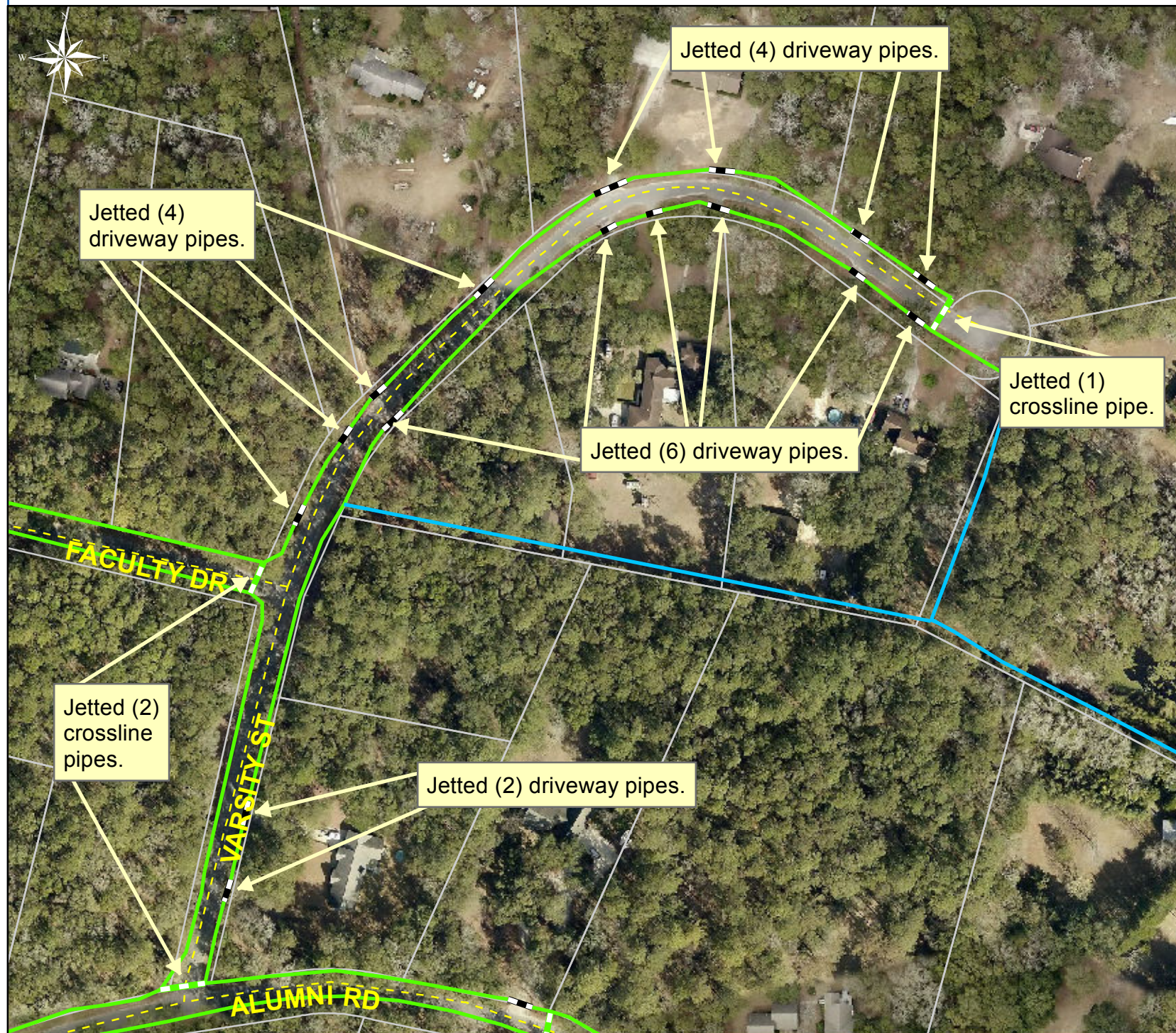
**Project: Varsity  
Street Channel #1  
Map 2**

**Activity: Vacuum  
Truck**

**Project #:  
2014-621**

**Township: Lady's  
Island**

**Completed:  
May 2014**



**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe

0 40 80 160 240 320  
Feet

**1 inch = 154 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 6/17/14

File: C:\sethdata\projects\projectmaps\Vac\Varsity St 201-621 Map2



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Trask Parkway Channel #1

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** Apr-14

Project improved 3,559 L.F. of drainage system. Cleaned out 2,975 L.F. of channel and 584 L.F. of lateral ditch. Installed (1) bleeder pipe.

| 2014-609 / Trask Parkway Channel #1                      | Labor<br>Hours   | Labor<br>Cost         | Equipment<br>Cost   | Material<br>Cost    | Contractor<br>Cost | Indirect<br>Labor     | Total Cost            |
|----------------------------------------------------------|------------------|-----------------------|---------------------|---------------------|--------------------|-----------------------|-----------------------|
| AUDIT / Audit Project                                    | 0.5              | \$10.23               | \$0.00              | \$0.00              | \$0.00             | \$6.62                | \$16.85               |
| BPINST / Bleeder pipe - Installed                        | 11.0             | \$245.85              | \$51.36             | \$116.35            | \$0.00             | \$158.90              | \$572.46              |
| HAUL / Hauling                                           | 25.5             | \$590.34              | \$278.20            | \$144.02            | \$0.00             | \$401.54              | \$1,414.10            |
| ODCO / Outfall ditch - cleaned out                       | 57.0             | \$1,234.25            | \$325.07            | \$121.41            | \$0.00             | \$816.60              | \$2,497.33            |
| ONJV / Onsite Job Visit                                  | 8.0              | \$258.76              | \$28.96             | \$30.70             | \$0.00             | \$183.28              | \$501.70              |
| RB / Remove blockage from flowline                       | 15.0             | \$331.60              | \$57.86             | \$97.32             | \$0.00             | \$220.80              | \$707.58              |
| <b>2014-609 / Trask Parkway Channel #1<br/>Sub Total</b> | <b>117.0</b>     | <b>\$2,671.03</b>     | <b>\$741.45</b>     | <b>\$509.80</b>     | <b>\$0.00</b>      | <b>\$1,787.72</b>     | <b>\$5,710.00</b>     |
| <br><b>Grand Total</b>                                   | <br><b>117.0</b> | <br><b>\$2,671.03</b> | <br><b>\$741.45</b> | <br><b>\$509.80</b> | <br><b>\$0.00</b>  | <br><b>\$1,787.72</b> | <br><b>\$5,710.00</b> |

Before



During



After



**Project: Trask  
Parkway Channel  
#1 Map 1**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-609**

**Township:  
Sheldon**

**Completed:  
April 2014**

**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe



0 70 140 280 420 560  
Feet

1 inch = 267 feet

Prepared By: BC Stormwater Management Utility

Date Print: 6/16/14

File: C:/sethdata/projects/projectmaps/Trask Pkwy 2014-609 Map1

**Project: Trask  
Parkway Channel  
#1 Map 2**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-609**

**Township:  
Sheldon**

**Completed:  
April 2014**

**Legend**

**TYPE**

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe

Cleaned out 1,340  
LF of channel.

D/W

D/W

OLD DAWSON ACRES

0 70 140 280 420 560  
Feet

1 inch = 267 feet

Prepared By: BC Stormwater Management Utility

Date Print: 6/16/14

File: C:/sethdata/projects/projectmaps/Trask Pkwy 2014-609 Map2



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Old Distant Island Road Channel

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** May-14

Project improved 650 L.F. of drainage system. Removed blockage from flapgate. Shinn cut and cleaned out 650 L.F. of channel.

| <b>2014-587 / Old Distant Island Road Channel</b>           | <b>Labor Hours</b> | <b>Labor Cost</b> | <b>Equipment Cost</b> | <b>Material Cost</b> | <b>Contractor Cost</b> | <b>Indirect Labor</b> | <b>Total Cost</b> |
|-------------------------------------------------------------|--------------------|-------------------|-----------------------|----------------------|------------------------|-----------------------|-------------------|
| AUDIT / Audit Project                                       | 0.5                | \$10.23           | \$0.00                | \$0.00               | \$0.00                 | \$6.62                | \$16.85           |
| DLO / Ditch Layout                                          | 38.0               | \$839.00          | \$129.26              | \$67.89              | \$0.00                 | \$394.59              | \$1,430.74        |
| HAUL / Hauling                                              | 20.0               | \$432.60          | \$214.00              | \$161.76             | \$0.00                 | \$288.40              | \$1,096.76        |
| LM / Loading Materials                                      | 15.0               | \$331.62          | \$119.96              | \$64.03              | \$0.00                 | \$220.80              | \$736.41          |
| ODCO / Outfall ditch - cleaned out                          | 48.0               | \$1,002.72        | \$567.22              | \$356.21             | \$0.00                 | \$654.48              | \$2,580.63        |
| ONJV / Onsite Job Visit                                     | 15.0               | \$518.68          | \$54.30               | \$57.00              | \$0.00                 | \$361.33              | \$991.31          |
| PRRECON / Project Reconnaissance                            | 2.0                | \$66.36           | \$7.24                | \$9.00               | \$0.00                 | \$48.94               | \$131.54          |
| RB / Remove blockage from flowline                          | 6.0                | \$130.80          | \$23.87               | \$6.37               | \$0.00                 | \$86.70               | \$247.74          |
| WSSHN / Workshelf - Shinn cut                               | 26.0               | \$578.52          | \$310.19              | \$155.02             | \$0.00                 | \$386.22              | \$1,429.95        |
| <b>2014-587 / Old Distant Island Road Channel Sub Total</b> | <b>170.5</b>       | <b>\$3,910.53</b> | <b>\$1,426.04</b>     | <b>\$877.28</b>      | <b>\$0.00</b>          | <b>\$2,448.07</b>     | <b>\$8,661.92</b> |
| <b>Grand Total</b>                                          | <b>170.5</b>       | <b>\$3,910.53</b> | <b>\$1,426.04</b>     | <b>\$877.28</b>      | <b>\$0.00</b>          | <b>\$2,448.07</b>     | <b>\$8,661.92</b> |

Before



During



After



**Project: Old Distant Island Road**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-587**

**Township: Port  
Royal Island**

**Completed:  
May 2014**

**Legend**

**TYPE**

-  River
-  Creek/Stream
-  River/Creek/Marsh BANK
-  Channel (fka Outfall)
-  Channel Pipe
-  Lateral
-  Lateral Pipe
-  Roadside
-  Roadside Pipe
-  Road Pipe
-  Crossline Pipe
-  Driveway Pipe
-  Access Pipe
-  Bleeder Pipe

Shinn cutt and cleaned  
out 650 LF of channel.

Removed blockage  
from flapgate.

0 60 120 240 360 480  
Feet

1 inch = 229 feet

Prepared By: BC Stormwater Management Utility

Date Print: 6/20/14

File: C:/sethdata/projects/projectmaps/Old Distant Is Rd 2014-587



**Beaufort County**  
**Public Works**  
**Stormwater Infrastructure**  
*Project Summary*

**Project Summary:** Huspah Drive

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**  
Installed (1) driveway pipe.

**Completion:** May-14

| <b>2014-618 / Huspah Drive</b>               | <b>Labor<br/>Hours</b> | <b>Labor<br/>Cost</b> | <b>Equipment<br/>Cost</b> | <b>Material<br/>Cost</b> | <b>Contractor<br/>Cost</b> | <b>Indirect<br/>Labor</b> | <b>Total Cost</b> |
|----------------------------------------------|------------------------|-----------------------|---------------------------|--------------------------|----------------------------|---------------------------|-------------------|
| AUDIT / Audit Project                        | 0.5                    | \$10.23               | \$0.00                    | \$0.00                   | \$0.00                     | \$6.62                    | \$16.85           |
| DPINS / Driveway Pipe - Installed            | 28.0                   | \$640.43              | \$48.56                   | \$424.21                 | \$0.00                     | \$424.41                  | \$1,537.61        |
| HAUL / Hauling                               | 10.0                   | \$216.30              | \$107.00                  | \$76.08                  | \$0.00                     | \$144.20                  | \$543.58          |
| ONJV / Onsite Job Visit                      | 7.0                    | \$208.88              | \$25.34                   | \$6.00                   | \$0.00                     | \$127.61                  | \$367.83          |
| <b>2014-618 / Huspah Drive<br/>Sub Total</b> | <b>45.5</b>            | <b>\$1,075.84</b>     | <b>\$180.90</b>           | <b>\$506.29</b>          | <b>\$0.00</b>              | <b>\$702.83</b>           | <b>\$2,465.87</b> |
| <br>                                         |                        |                       |                           |                          |                            |                           |                   |
| <b>Grand Total</b>                           | <b>45.5</b>            | <b>\$1,075.84</b>     | <b>\$180.90</b>           | <b>\$506.29</b>          | <b>\$0.00</b>              | <b>\$702.83</b>           | <b>\$2,465.87</b> |

Before

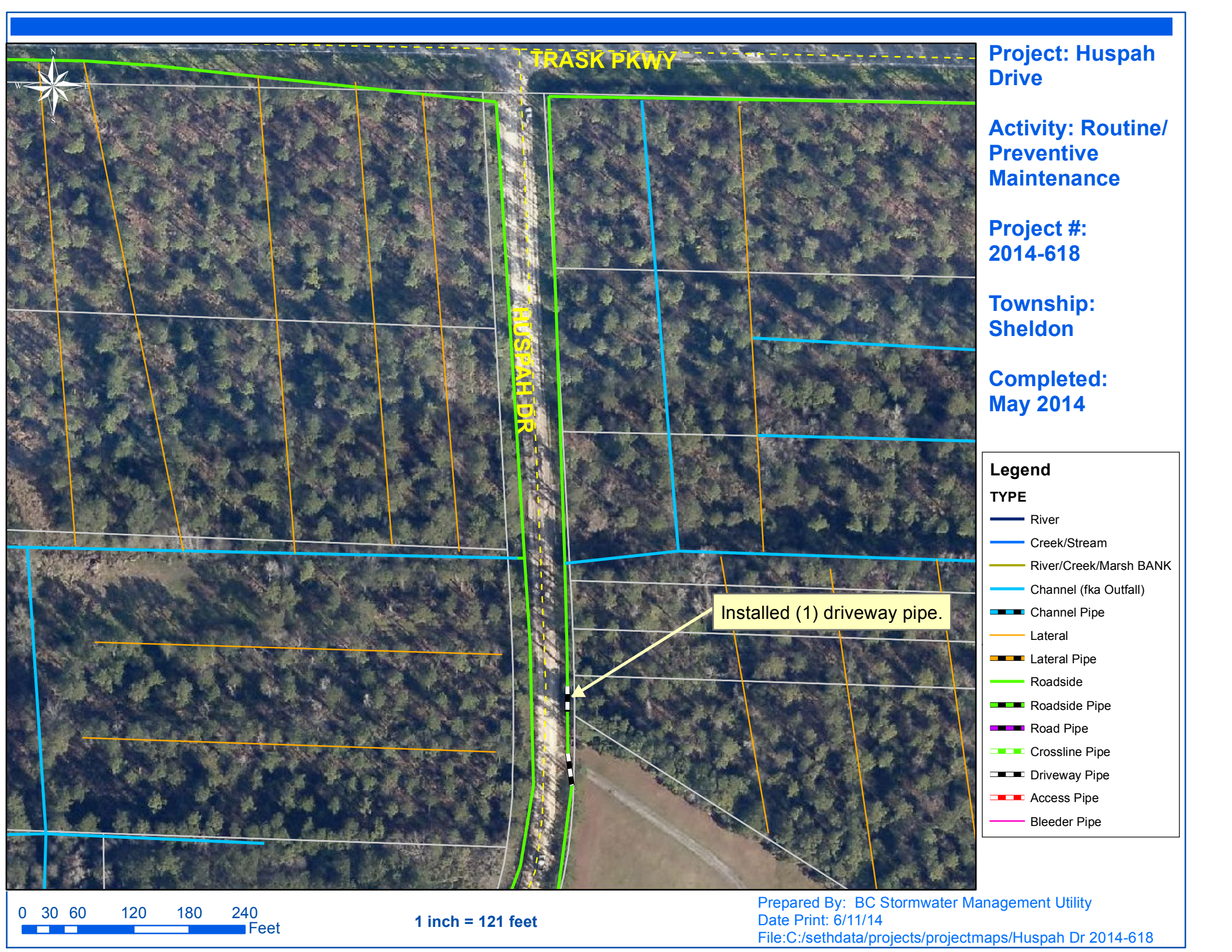


During



After







# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Community Bible Church Channel

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**  
Repaired damaged channel pipe.

**Completion:** May-14

| 2014-622 / Community Bible Church              | Labor<br>Hours | Labor<br>Cost | Equipment<br>Cost | Material<br>Cost | Contractor<br>Cost | Indirect<br>Labor | Total Cost |
|------------------------------------------------|----------------|---------------|-------------------|------------------|--------------------|-------------------|------------|
| AUDIT / Audit Project                          | 0.5            | \$10.23       | \$0.00            | \$0.00           | \$0.00             | \$6.62            | \$16.85    |
| HAUL / Hauling                                 | 1.0            | \$21.63       | \$10.70           | \$6.03           | \$0.00             | \$12.21           | \$50.57    |
| OFPR / Outfall Pipe - Repaired                 | 20.0           | \$428.01      | \$51.36           | \$120.30         | \$0.00             | \$220.80          | \$820.47   |
| ONJV / Onsite Job Visit                        | 10.0           | \$362.80      | \$36.20           | \$42.00          | \$0.00             | \$257.70          | \$698.70   |
| SD / Soft Digging                              | 14.0           | \$302.79      | \$80.96           | \$42.85          | \$0.00             | \$200.76          | \$627.36   |
| WSL / Workshelf - Level                        | 15.0           | \$331.60      | \$18.10           | \$6.74           | \$0.00             | \$159.75          | \$516.19   |
| 2014-622 / Community Bible Church<br>Sub Total | 60.5           | \$1,457.07    | \$197.32          | \$217.92         | \$0.00             | \$857.83          | \$2,730.14 |
| Grand Total                                    | 60.5           | \$1,457.07    | \$197.32          | \$217.92         | \$0.00             | \$857.83          | \$2,730.14 |

Before



During



After



Project: Community Bible Church Channel

Activity: Routine/ Preventive Maintenance

Project #: 2014-622

Township: Port Royal Island

Completed: May 2014

### Legend

#### TYPE

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe



Prepared By: BC Stormwater Management Utility

Date Print: 6/20/14

File: C:/sethdata/projects/projectmaps/Community Bible 2014-622



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Mulrain Road

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** May-14

Project improved 525 L.F. of drainage system. Cleaned out (1) catch basin and 525 L.F. of channel.  
Repaired (1) catch basin.

| 2014-625 / Mulrain Road            | Labor<br>Hours   | Labor<br>Cost         | Equipment<br>Cost   | Material<br>Cost    | Contractor<br>Cost | Indirect<br>Labor     | Total Cost            |
|------------------------------------|------------------|-----------------------|---------------------|---------------------|--------------------|-----------------------|-----------------------|
| AUDIT / Audit Project              | 0.5              | \$10.23               | \$0.00              | \$0.00              | \$0.00             | \$6.62                | \$16.85               |
| CBCO / Catch basin - clean out     | 6.0              | \$129.77              | \$66.48             | \$34.54             | \$0.00             | \$86.04               | \$316.83              |
| CBREP / Catch basin - repaired     | 28.0             | \$625.56              | \$43.44             | \$163.13            | \$0.00             | \$398.04              | \$1,230.17            |
| HAUL / Hauling                     | 13.0             | \$302.07              | \$139.10            | \$170.49            | \$0.00             | \$203.33              | \$814.99              |
| ODCO / Outfall ditch - cleaned out | 48.0             | \$1,115.10            | \$300.95            | \$81.81             | \$0.00             | \$723.18              | \$2,221.04            |
| ONJV / Onsite Job Visit            | 7.0              | \$212.22              | \$25.34             | \$21.00             | \$0.00             | \$133.85              | \$392.41              |
| <b>2014-625 / Mulrain Road</b>     | <b>102.5</b>     | <b>\$2,394.95</b>     | <b>\$575.31</b>     | <b>\$470.97</b>     | <b>\$0.00</b>      | <b>\$1,551.06</b>     | <b>\$4,992.29</b>     |
| <b>Sub Total</b>                   |                  |                       |                     |                     |                    |                       |                       |
| <br><b>Grand Total</b>             | <br><b>102.5</b> | <br><b>\$2,394.95</b> | <br><b>\$575.31</b> | <br><b>\$470.97</b> | <br><b>\$0.00</b>  | <br><b>\$1,551.06</b> | <br><b>\$4,992.29</b> |

Before



During



After



**Project: Mulrain Road**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-625**

**Township: Port  
Royal Island**

**Completed:  
May 2014**

### Legend

#### TYPE

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe



Prepared By: BC Stormwater Management Utility

Date Print: 6/6/14

File: C:/sethdata/projects/projectmaps/Mulrain Rd 2014-625



**Beaufort County**  
**Public Works**  
**Stormwater Infrastructure**  
*Project Summary*

**Project Summary:** Sanders/ St Helena Island Post Office Channel

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

Project improved 9 L.F. of drainage system. Installed (1) catch basin, 9 L.F. of channel pipe, rip rap and handseeded for erosion control.

**Completion:** May-14

| <b>2014-629 / Sanders/ St Helena Island Post Office</b>               | <b>Labor<br/>Hours</b> | <b>Labor<br/>Cost</b> | <b>Equipment<br/>Cost</b> | <b>Material<br/>Cost</b> | <b>Contractor<br/>Cost</b> | <b>Indirect<br/>Labor</b> | <b>Total Cost</b> |
|-----------------------------------------------------------------------|------------------------|-----------------------|---------------------------|--------------------------|----------------------------|---------------------------|-------------------|
| AUDIT / Audit Project                                                 | 0.5                    | \$10.23               | \$0.00                    | \$0.00                   | \$0.00                     | \$6.62                    | \$16.85           |
| CBINS / Catch basin - installed                                       | 32.0                   | \$729.84              | \$177.20                  | \$359.06                 | \$0.00                     | \$459.12                  | \$1,725.22        |
| HAUL / Hauling                                                        | 10.0                   | \$216.30              | \$107.00                  | \$269.54                 | \$0.00                     | \$144.20                  | \$737.04          |
| ONJV / Onsite Job Visit                                               | 8.0                    | \$238.72              | \$28.96                   | \$6.00                   | \$0.00                     | \$145.84                  | \$419.52          |
| PP / Project Preparation                                              | 2.0                    | \$88.54               | \$7.24                    | \$9.00                   | \$0.00                     | \$67.92                   | \$172.70          |
| SC / Sediment Control                                                 | 40.0                   | \$923.76              | \$137.44                  | \$54.19                  | \$0.00                     | \$592.56                  | \$1,707.95        |
| <b>2014-629 / Sanders/ St Helena Island Post Office<br/>Sub Total</b> | <b>92.5</b>            | <b>\$2,207.39</b>     | <b>\$457.84</b>           | <b>\$697.78</b>          | <b>\$0.00</b>              | <b>\$1,416.26</b>         | <b>\$4,779.27</b> |
|                                                                       |                        |                       |                           |                          |                            |                           |                   |
| <b>Grand Total</b>                                                    | <b>92.5</b>            | <b>\$2,207.39</b>     | <b>\$457.84</b>           | <b>\$697.78</b>          | <b>\$0.00</b>              | <b>\$1,416.26</b>         | <b>\$4,779.27</b> |

Before

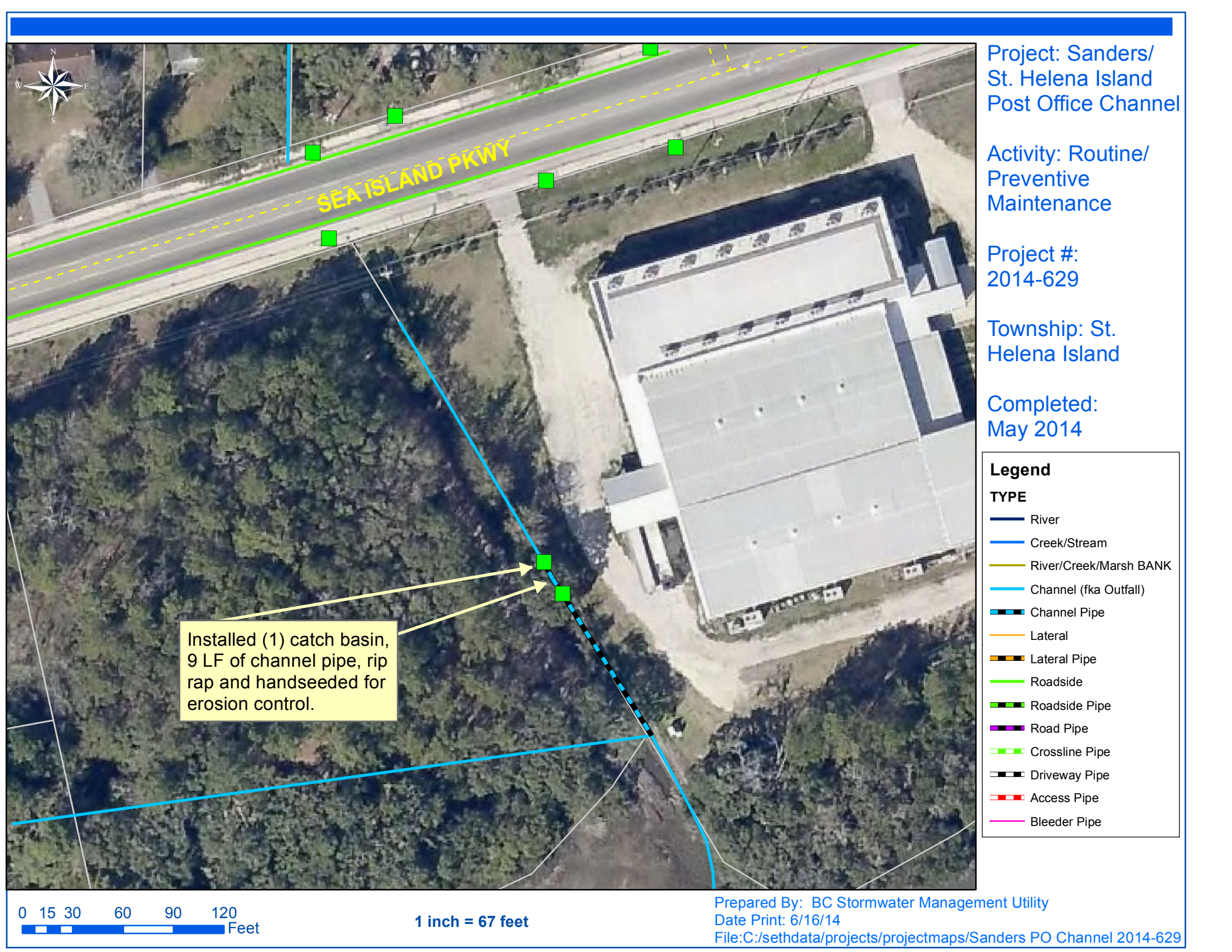


During



After





Project: Sanders/  
St. Helena Island  
Post Office Channel

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2014-629

Township: St.  
Helena Island

Completed:  
May 2014

**Legend**

**TYPE**

River

Creek/Stream

River/Creek/Marsh BANK

Channel (fka Outfall)

Channel Pipe

Lateral

Lateral Pipe

Roadside

Roadside Pipe

Road Pipe

Crossline Pipe

Driveway Pipe

Access Pipe

Bleeder Pipe

Installed (1) catch basin,  
9 LF of channel pipe, rip  
rap and handseeded for  
erosion control.

0 15 30 60 90 120  
Feet

1 inch = 67 feet



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Polite Drive

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** Jun-14

Project improved 864 L.F. of drainage system. Cleaned out 864 L.F. of roadside ditch. Hydroseeded for erosion control.

| 2014-628 / Polite Drive           | Labor<br>Hours   | Labor<br>Cost         | Equipment<br>Cost   | Material<br>Cost    | Contractor<br>Cost | Indirect<br>Labor     | Total Cost            |
|-----------------------------------|------------------|-----------------------|---------------------|---------------------|--------------------|-----------------------|-----------------------|
| AUDIT / Audit Project             | 0.5              | \$10.23               | \$0.00              | \$0.00              | \$0.00             | \$6.62                | \$16.85               |
| EDO / Equipment Drop Off          | 4.0              | \$91.74               | \$21.40             | \$6.74              | \$0.00             | \$62.20               | \$182.08              |
| HAUL / Hauling                    | 18.0             | \$389.34              | \$192.60            | \$86.91             | \$0.00             | \$259.56              | \$928.41              |
| HYDR / Hydroseeding               | 6.0              | \$143.88              | \$19.68             | \$106.40            | \$0.00             | \$92.74               | \$362.70              |
| ONJV / Onsite Job Visit           | 3.0              | \$103.95              | \$10.86             | \$6.00              | \$0.00             | \$70.42               | \$191.23              |
| PRRECON / Project Reconnaissance  | 1.0              | \$29.84               | \$3.62              | \$3.00              | \$0.00             | \$18.23               | \$54.69               |
| RSDCL / Roadside Ditch - Cleanout | 76.5             | \$1,760.30            | \$390.98            | \$100.93            | \$0.00             | \$1,126.09            | \$3,378.29            |
| SVCREQ / Service Request          | 2.0              | \$88.54               | \$7.24              | \$0.00              | \$0.00             | \$67.92               | \$163.70              |
| TRAIN / Training                  | 4.0              | \$77.12               | \$0.00              | \$0.00              | \$0.00             | \$48.84               | \$125.96              |
| UTLOC / Utility locates           | 0.5              | \$10.23               | \$0.00              | \$0.00              | \$0.00             | \$6.62                | \$16.85               |
| <b>2014-628 / Polite Drive</b>    | <b>115.5</b>     | <b>\$2,705.17</b>     | <b>\$646.38</b>     | <b>\$309.98</b>     | <b>\$0.00</b>      | <b>\$1,759.23</b>     | <b>\$5,420.75</b>     |
| <br><b>Grand Total</b>            | <br><b>115.5</b> | <br><b>\$2,705.17</b> | <br><b>\$646.38</b> | <br><b>\$309.98</b> | <br><b>\$0.00</b>  | <br><b>\$1,759.23</b> | <br><b>\$5,420.75</b> |

Before



During



After



**Project: Polite Drive**

**Activity: Routine/  
Preventive  
Maintenance**

**Project #:  
2014-628**

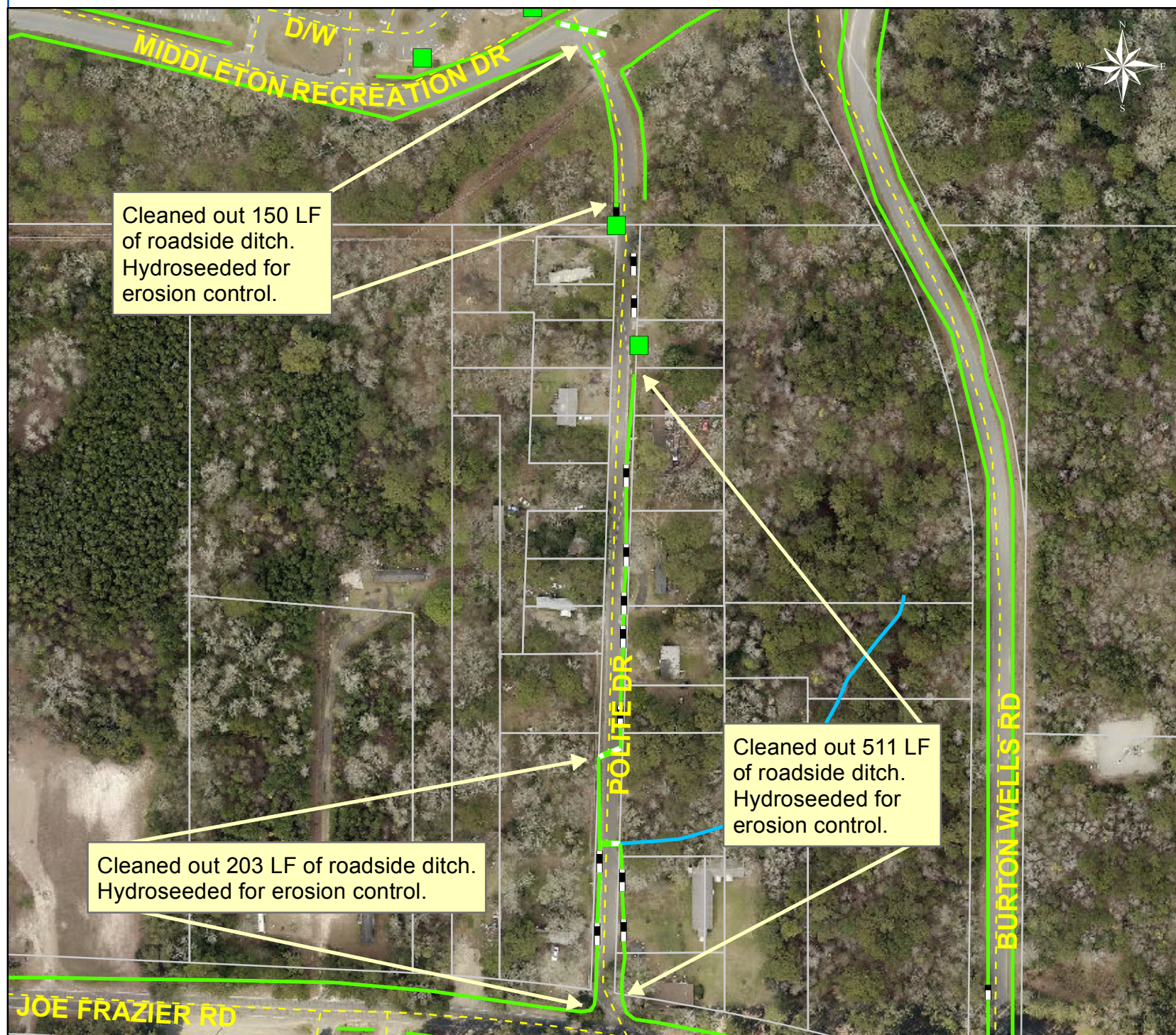
**Township: Port  
Royal Island**

**Completed:  
June 2014**

**Legend**

**TYPE**

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe



0 40 80 160 240 320  
Feet

**1 inch = 171 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 6/20/14

File: C:/sethdata/projects/projectmaps/Polite Dr 2014-628



# Beaufort County Public Works Stormwater Infrastructure Project Summary

**Project Summary:** Okatie East Retrofit (Rework)

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Completion:** Apr-14

Removed blockage from flowline. Repaired washout. Installed rip rap for erosion control.

| 2012-006R / Okatie East Retrofit (Rework)        | Labor<br>Hours | Labor<br>Cost     | Equipment<br>Cost | Material<br>Cost  | Contractor<br>Cost | Indirect<br>Labor | Total Cost        |
|--------------------------------------------------|----------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|
| AUDIT / Audit Project                            | 0.5            | \$10.23           | \$0.00            | \$0.00            | \$0.00             | \$6.62            | \$16.85           |
| HAUL / Hauling                                   | 6.0            | \$133.32          | \$64.20           | \$1,557.03        | \$0.00             | \$89.10           | \$1,843.65        |
| ONJV / Onsite Job Visit                          | 7.0            | \$208.88          | \$25.34           | \$11.72           | \$0.00             | \$127.61          | \$373.55          |
| PRRECON / Project Reconnaissance                 | 8.0            | \$252.08          | \$14.48           | \$8.20            | \$0.00             | \$170.80          | \$445.56          |
| RPWO / Repaired Washout                          | 10.0           | \$229.30          | \$93.26           | \$44.72           | \$0.00             | \$154.65          | \$521.93          |
| <b>2012-006R / Okatie East Retrofit (Rework)</b> | <b>43.5</b>    | <b>\$1,099.09</b> | <b>\$211.76</b>   | <b>\$1,645.11</b> | <b>\$0.00</b>      | <b>\$725.41</b>   | <b>\$3,681.38</b> |
| <b>Sub Total</b>                                 |                |                   |                   |                   |                    |                   |                   |
| <br>                                             |                |                   |                   |                   |                    |                   |                   |
| <b>Grand Total</b>                               | <b>43.5</b>    | <b>\$1,099.09</b> | <b>\$211.76</b>   | <b>\$1,645.11</b> | <b>\$0.00</b>      | <b>\$725.41</b>   | <b>\$3,681.38</b> |

Before



During



After



Project: Okatie East  
Retrofit - Rework

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2012-006R

Township:  
Bluffton

Completed:  
April 2014

#### Legend

##### TYPE

- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel (fka Outfall)
- Channel Pipe
- Lateral
- Lateral Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Access Pipe
- Bleeder Pipe
- ▲ Headwall
- Concrete Box

Removed blockage from flowline.  
Repaired washout. Installed rip  
rap for erosion control.

HAMPTON PKWY

ST SIMONS DR

0 50 100 200 300 400  
Feet

1 inch = 207 feet

Prepared By: BC Stormwater Management Utility

Date Print: 6/10/14

File: C:/sethdata/projects/projectmaps/Okatie East Rework 2014-006R



BEAUFORT COUNTY  
STORMWATER MANAGEMENT UTILITY BOARD  
AGENDA

Wednesday, August 6, 2014

2:00 p.m.

Beaufort Industrial Village, Building 3 Conference Room  
104 Industrial Village Road, Beaufort  
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 – July 2, 2014 ([backup](#))
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
  - A. Special Presentation – Bryan McIlwee, Town of Hilton Head Island
  - B. Utility Update – Eric Larson, P.E. ([backup](#))
  - C. MS4 Update - Eric Larson, P.E. ([backup](#))
  - D. Monitoring Update – Eric Larson, P.E. ([backup](#))
  - E. Stormwater Implementation Committee Report – Eric Larson, P.E. ([backup](#))
  - F. Stormwater Related Projects – Eric Larson, P.E. ([backup](#))
  - G. Upcoming Professional Contracts Report – Eric Larson, P.E. ([backup](#))
  - H. Regional Coordination – Eric Larson, P.E. ([backup](#))
  - I. Financial Report ([backup](#))
  - J. Maintenance Projects Report – Eddie Bellamy ([backup](#))
5. UNFINISHED BUSINESS
6. NEW BUSINESS
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
  - A. September 3, 2014 ([backup](#))
9. ADJOURNMENT

