



BEAUFORT COUNTY  
STORMWATER MANAGEMENT UTILITY BOARD AGENDA  
Wednesday, October 18, 2017  
2:00 p.m.  
Executive Conference Room, Administration Building  
Beaufort County Government Robert Smalls Complex  
100 Ribaut Road, Beaufort, South Carolina  
843.255.2805

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

1. CALL TO ORDER – 2:00 p.m.
  - A. Approval of Agenda
  - B. Approval of Minutes – August 16, 2017 and September 20, 2017 ([backup](#))
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
  - A. Utility Update – Eric Larson, P.E. ([backup](#))
  - B. Monitoring Update – Eric Larson, P.E. ([backup](#))
  - C. Stormwater Implementation Committee Report – Eric Larson, P.E. ([backup](#))
  - D. Stormwater Related Projects – Eric Larson, P.E. ([backup](#))
  - E. Upcoming Professional Contracts Report – Eric Larson, P.E. ([backup](#))
  - F. Regional Coordination – Eric Larson, P.E. ([backup](#))
  - G. Municipal Reports – Eric Larson, P.E. ([backup](#))
  - H. MS4 Update – Eric Larson, P.E. ([backup](#))
  - I. Maintenance Projects Report – David Wilhelm ([backup](#))
5. UNFINISHED BUSINESS
  - A. Proposed Revision to County Code of Ordinance Chapter 99 for Transportation Exemption ([backup](#))
  - B. Stormwater Regionalization Update
6. NEW BUSINESS
  - A. 2018 SWMU Board Meeting Schedule – Eric Larson ([backup](#))
7. PUBLIC COMMENT
8. EXECUTIVE SESSION
  - A. Receipt of Legal Advice Incident to Potential Litigation - Project H
9. MATTERS ARISING OUT OF EXECUTIVE SESSION
10. NEXT MEETING AGENDA
  - A. November 15, 2017 ([backup](#))
11. ADJOURNMENT



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

August 16, 2017 at 2:00 p.m. in Executive Conference Room, Administration Building, Beaufort County Government Robert Smalls Complex, 100 Ribaut Road, Beaufort, South Carolina

Draft Minutes 08/21/2017

### Board Members

#### Present

Don Smith  
William Bruggeman  
Marc Feinberg

#### Absent

Allyn Schneider  
Larry Meisner  
Patrick Mitchell  
James Fargher

### Ex-Officio Members

#### Present

Andy Kinghorn  
Scott Liggett  
Van Willis

#### Absent

Kim Jones

### Beaufort County Staff

David Wilhelm  
Rebecca Baker  
Melissa Allen  
Matthew Rausch

### Visitors

Alice Howard, County Council District 4  
Bill Baugher, Town of Bluffton  
Tony Maglione, Consultant  
Ellen Comeau, Clemson Extension  
Alan Warren, USCB Lab  
Steve Andrews, Andrews Engineering

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

- A. Agenda
- B. May 17, 2017 Minutes

#### 2. Introductions – Completed.

#### 3. Public Comment(s) – None.

#### 4. Reports – Mr. Eric Larson and Mr. David Wilhelm provided a written report which is included in the posted agenda and can be accessed at:

<http://www.bcgov.net/departments/Administrative/beaufort-county-council/boards-and-commissions/council-appointed/board-list/stormwater-management-utility-board/agendas/2017/081617.pdf>

##### A. Utility Update –

Please reference the report which is included in the posted agenda. No additional updates.

##### B. Monitoring Update –

Mr. Andy Kinghorn asked Dr. Alan Warren if results from 319 Battery Creek have come in. Dr. Warren indicated that the outgoing concentrations are lower than the incoming and that the BMP looks to be functioning reasonably well. He noted that six months ago there was a high goose population, but not currently.

**C. Stormwater Implementation Committee (SWIC) Report –**

Please reference the report which is included in the posted agenda. No additional updates.

**D. Stormwater Related Projects –**

Please reference the report which is included in the posted agenda. No additional updates.

**E. Professional Contracts Report –**

Please reference the report which is included in the posted agenda. No additional updates.

**F. Regional Coordination –**

Please reference the report which is included in the posted agenda. No additional updates.

**G. Municipal Reports –**

Please reference the report which is included in the posted agenda. No additional updates.

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

In response to a question, Mrs. Rebecca Baker explained she is part of the staff review team (SRT) which is why plan review is included in the report. She clarified that if a permit is deferred or approved with conditions it may not necessarily be stormwater related.

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

Mr. David Wilhelm explained that the projects this past month were all routine maintenance. The budget goal for them is \$5.00 per foot for a channel clean out. All but one project came in under budget; Capehart Circle was slightly over at \$5.23 a foot.

**5. Unfinished Business – None.**

**6. New Business**

**A. Special Presentation: Town of Port Royal – Cypress Wetlands Modification Project –**  
Mr. Tony Maglione explained that the Cypress Wetlands project was one of the first large scale regional BMPs in Port Royal; it was set up about five years ago and is three wetlands in series. It is now time for maintenance to clean out extra sediments and invasive species in the largest wetland.

The plan is to clean areas around the islands (red area in the map on page #4). Mr. Kinghorn asked about the quality of the sediment that will be removed. Mr. Maglione explained they ran TCLP tests and it was fine. He explained that this wetland captures a lot of sediment run off. The plan is to clear Island #1 of all invasive trees and plants and clear the western side of Island #2 of invasive trees and plant, leaving the Cypress trees on the east side. They will also remove various shrubs, floating plants, and invasive species in the red areas show on the map.

They plan to excavate to create open water areas and use Richmond Avenue access to remove the debris. The material will be disposed of at 6<sup>th</sup> Street, next to the dry stack marina. This area is planned to be an open park. This project is cost effective due to the short hauling distance of only 0.9 miles.

All organic material will be laid out to dry and then a mechanically ventilated burn pit will be constructed to burn the material. All sediment and excavated materials will be dried out and

spread above the critical line to build up the park area by 6-8 inches. It will then be seeded for protection and stabilization.

There is a possibility of creating a third rookery island. The advantages of an additional island is providing an additional protected rookery and would allow excavated sediment and soil to remain on site, avoiding hauling/drying and spreading costs.

The replanting plan is to replant as many native trees as possible, such as Cypress. If Island #3 is created they would plant native trees. Sufficient scrubs will remain and continue to grow in undisturbed areas. The maintenance plan for the islands is to hand spray invasive plants and tree seedlings with herbicide frequently and reduce spraying as new native plants establish. In the open water areas, they will continue to spray algaecide to manage algae and herbicide to manage duck weed.

The preliminary cost for the project is \$350,000 and funding plan is stormwater fees in the amount of \$250,000 and the Town of Port Royal is waiting on approval of a USFW North American Wetlands Conservation Act (NAWCA) grant for \$100,000, which is key.

In response to a question about how having a rookery in a stormwater BMP is compatible, Mr. Maglione explained that there are three wetlands in series, the wetland with the rookery goes into a smaller three (3) acre wetland where birds don't gather, then moves down to 15<sup>th</sup> Street into a two and half (2.5) acre wetland and discharges at two points at 12<sup>th</sup> Street into the harbor.

[The Cypress Wetlands presentation is attached to the minutes.](#)

#### ***B. Recommendation to Award Consultant Contracts for the FY18 Group CIP Projects –***

Mrs. Rebecca Baker gave an overview of information that was included in the memo and packet regarding the four projects in the FY18 grouping. The County is recommending awarding Ward Edwards the Brewer Memorial Park and Sawmill Creek Projects. The proposal for Brewer Memorial came in at \$90,000. She noted that the full proposals have gone over the original budget, but the County has included an alternate plan that would reduce the costs of the project. An alternative plan for Brewer Memorial, removing water quality monitoring, would reduce the project down to \$66,000. The Sawmill Creek project (off of HWY 278) came in at \$112,000, but could be reduced down to \$88,000 if the water quality monitoring was removed from the scope.

The County is recommending awarding Andrews Engineering the Salt Creek and Shanklin Road projects. The Salt Creek proposal came in at \$222,387 and the County is not recommending an alternative plan for this project and the Shanklin Road proposal came in at \$319,572 and the alternative plan would be to remove the wetland enhancement to lower the cost to \$225,594.

Mrs. Baker noted that funding is available and the projects were approved in the 2015 CIP plan. She explained if the Board was not in favor of going over budget, the alternate plan will put the County under budget.

Discussion took place about the monitoring plan, alternative plans to monitoring and the importance of it. There were not enough members present to vote, but Mr. Don Smith mentioned that Mr. Larson does not need to have the Board's recommendation to go to NRC, but would like to get an idea of their thoughts. After discussion, it was evident that water quality monitoring was important to the Board.

#### ***C. Discussion about Work Shelves –*** Mr. William Bruggeman asked if the County has considered other ways to do work without cutting huge work shelves. Mr. David Wilhelm explained the work shelves are required for building and maintaining a ditch. He explained that we need a minimum of 10 feet and that the County will look at them case by case and determines

the size based on the size/depth of the ditch. The County doesn't request anything wider than what they need to do the work.

Mr. Bruggeman asked if we have gone out to see what others do. Mr. Wilhelm explained he could check into it, but is not aware of any other way to do it effectively. He explained during initial construction they can work backward, but indicated that the maintenance of the ditch would then be challenging as there is nowhere to work from. He noted that it is cheaper to build the work shelf initially than later on. Mr. Scott Liggett explained that the ditches on HHI appear to always be wet, which poses a challenge to maintain without a work shelf. Mr. Bill Baugher expressed that work shelves are important, especially with the time and resources available to get everything done and stay safe.

Mr. Bruggeman concern is that it seems to be the biggest complaint received is about the clearing of a bunch of trees when the County requests right of way. Mr. Don Smith mentioned that it seems most of the complaints are coming from older systems/ditches that haven't been maintained.

**D. Outfalls without BMPS** - Mr. Don Smith shared aerial photography of the shoreline off of Laurel Bay. He pointed out three old concrete channels that lead to the water. He was unsure if it is silt or scouring, but pointed out that you can visibly see they are having an effect on the shoreline. He noted these are a good example of outfalls without BMPs.

**7. Public Comment(s)** – None.

**8. Next Meeting Agenda** –

Addition – Update from City of Beaufort (culvert under Spanish Moss Trail near First Blvd. and Royal Oaks).

**9. Meeting Adjourned**

# Town of Port Royal Cypress Wetlands Habitat Restoration Plan



Amphitheater

Island #1

YMCA

Richmond Overlook

Island #2

Existing Site

© 2016 Google

16th Street

Google



# Project Team & Advisers

## **Team:**

- Travis Folk, PhD – Folk Environmental
- Paul Hengecliff – Folk Environmental
- Bridget Lussier – Biologist

## **Advisers:**

- Jason Ayers – USFW Coastal Program
- Chris Fernandez – USFW Coastal Program
- Craig Watson – Atlantic Joint Venture - USFW



Island #1

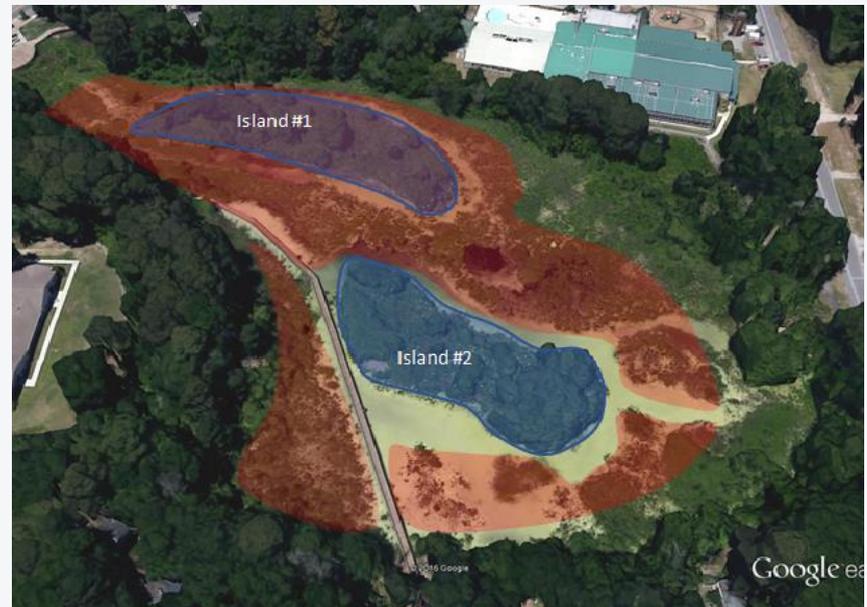
Island #2

**Areas to be Disturbed**

# Cypress Wetlands Restoration

## ❖ Clearing Plan:

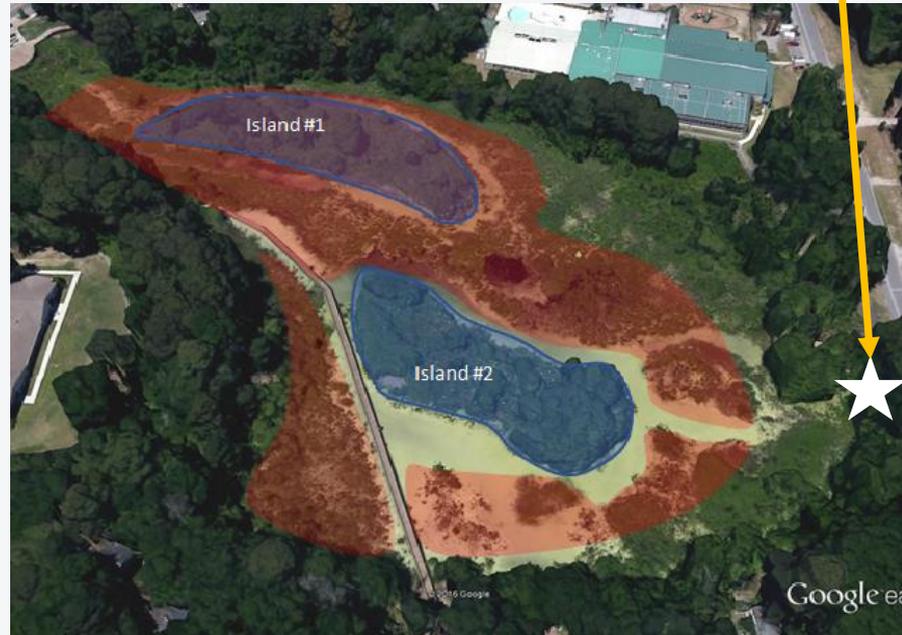
- ✓ Clear Island #1 of all Invasive Tree and Plant Species
- ✓ Clear western side of Island #2 of all Invasive Tree and Plant Species leaving Cypress Trees on east side as is
- ✓ Remove various shrubs and invasive species from areas indicated in Red on Plan



# Cypress Wetlands Restoration

## ❖ Excavation Plan:

- ✓ Excavate to create open water areas shown in Red
- ✓ Excavate existing open water areas to remove accumulated silt and deepen
- ✓ Existing Richmond Ave. access to be used to remove debris and silt



# Cypress Wetlands Restoration

## ❖ Disposal Site and Transport Plan:

- Distance of debris hauling and lease of disposal site are the largest single cost item if debris has to be hauled from downtown to a location well off site.
- Propose to use the open former dredge disposal site at 6<sup>th</sup> Ave. (Port Property) next to the existing dry stack
- Very short haul distance of 0.9 miles
- Area should be under Town ownership and control by year end
- Area is planned for an open park so disposal of organic sediment will not impact the site, will raise elevation slightly

# Proposed Disposal Site

Existing Dry Stack

Disposal Site

6th Ave



# Cypress Wetlands Restoration

## ❖ Disposal Site Activities Needed:

- ✓ All organic materials (trees, shrubs, floating vegetative mats, etc.)
  - Will be piled and allowed to dry for a number of weeks (depending on rainfall)
  - Once dried out, a mechanically ventilated burn pit will be constructed to burn all organic material.
- ✓ All sediment and excavated materials
  - Will be stock piled and allowed to dry
  - Materials will be mixed
  - Material will be spread on areas above the Critical Line to slightly raise the elevation of the park area
  - All areas will be seeded and silt fenced as needed

# Cypress Wetlands Restoration

## ❖ Possible Creation of a Third Rookery Island:

- ✓ There is sufficient area on site to create a third rookery island
- ✓ Advantages of a third island:
  - Will provide an additional protected rookery
  - Will allow excavated sediment and soil to remain on site avoiding hauling, drying and spreading costs



# Cypress Wetlands Restoration

## ❖ Replanting Plan:

- ✓ In areas of Islands #1 and #2 that are cleared of invasive species (mainly Tallow Trees) replant with native trees (e.g. Cypress)
- ✓ If Island #3 is constructed plant entire island with native trees
- ✓ Sufficient scrubs will remain that will continue to grow in undisturbed areas

# Cypress Wetlands Restoration

## ❖ Maintenance Plan:

### ✓ Islands:

- Initially, hand spray invasive plants and tree seedlings with herbicide frequently (four times per year or more if needed)
- Reduce herbicide spraying as new native plants establish themselves

### ✓ Open Water Areas:

- Continue current program of algicide spraying to manage algae
- Continue current program of herbicide spraying to manage floating weeds (e.g. duck weed)

### ✓ Continue biological and water quality monitoring

# Cypress Wetlands Restoration

## ❖ Preliminary Cost Estimate:

- ✓ Preliminary Project Feasibility Study \$12,000
- ✓ Design, permitting, plans and specifications for construction \$18,000
- ✓ Construction \$275,000
- ✓ Field engineering & coordination \$20,000
- ✓ Plantings \$25,000
- ✓ **Total Preliminary Cost: \$350,000**

# Cypress Wetlands Restoration

## ❖ Funding Plan:

✓ Available SW Funds:	\$250,000
✓ USFW NAWCA* Grant	<u>\$100,000</u>
	\$350,000

\*North American Wetlands Conservation Act

An aerial photograph of a golf course. A large, irregularly shaped area in the center is highlighted in a light green color, possibly indicating a specific feature or area of interest. A path or road runs through the green area. In the background, there are several buildings, including a large one with a blue roof and a smaller one with a white roof. The surrounding area is filled with dense green trees.

# Questions & Answers

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

September 20, 2017 at 2:00 p.m. in Executive Conference Room, Administration Building, Beaufort County Government Robert Smalls Complex, 100 Ribaut Road, Beaufort, South Carolina

Draft Minutes 10/05/2017

### Board Members

#### Present

Don Smith  
Marc Feinberg  
Allyn Schneider  
Larry Meisner  
James Fargher

#### Absent

Patrick Mitchell  
William Bruggeman

### Ex-Officio Members

#### Present

Andy Kinghorn  
Scott Liggett  
Kim Jones (By Phone)

#### Absent

Van Willis

### Beaufort County Staff

Eric Larson  
Melissa Allen

### Visitors

Alice Howard, County Council District 4  
Alan Warren, USCB Lab  
Steve Andrews, Andrews Engineering  
Paul Moore, Ward Edwards  
Lamar Taylor, City of Beaufort  
Denise Parsick, Beaufort SW Conservation District  
Jeff Netzinger, Town of Hilton Head  
Jeff Buckalew, Town of Hilton Head  
Brian Eber, Town of Hilton Head  
Jeff Ackerman, Carolina Engineering  
Penney Smith, Broad River Bluff

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

- A. Agenda – Addition under New Business - Discussion of Regionalization of Stormwater Services – Approved.
- B. July 19, 2017 Minutes – Approved.

### 2. Introductions – Completed.

### 3. Public Comment(s) – None.

Mr. Eric Larson explained that Stormwater staff member Rebecca Baker is not here with us today, as she is out on extended leave due to an illness in the family. He asked to please keep her, her family and husband in thoughts and prayers.

### 4. Reports – Mr. Eric Larson provided a written report which is included in the posted agenda and can be accessed at:

<http://www.bcgov.net/departments/Administrative/beaufort-county-council/boards-and-commissions/council-appointed/board-list/stormwater-management-utility-board/agendas/2017/092017.pdf>

**A. Utility Update – Eric Larson**

In regards to Hurricane Irma, Mr. Larson noted that stormwater and public works staff have been out responding over the past week. The County has some system damage and has more debris clogging pipes and ditches at outfalls than seen during Hurricane Matthew which is estimated at \$280,000 (assuming it was managed by a contractor). The County is currently pursuing funding through FEMA and NRCS Emergency Watershed Protection program. If able to receive any of these funds an update will be provided, if not it will be an in house effort over the next few months.

Mr. Don Smith asked if the County was aware of an overtopping that occurred on Highway 21 outgoing (west bound) at the Whale Branch bridge. Mr. Larson stated he was not aware, but will make note of it.

In reference to the tax run (item #2), Mr. Larson noted that there will not be a delay in billing due to Hurricane Irma. He also mentioned that item #4 regarding the Southern Regional Planning committee and item #5 regarding County Code of Ordinance Chapter 99 will be discussed during new business.

**B. Monitoring Update – Eric Larson**

In reference to the USCB Lab report for Beaufort County, Mr. Andy Kinghorn asked if the September 18<sup>th</sup>, Battery Creek 319 meeting took place. Mr. Larson stated that meeting is being rescheduled.

Mr. Larson expressed his appreciation to the Board for their concurrence with staff to increase the budget for the Capital Improvement Project FY18 grouping. It has been approved through both Natural Resources Committee and County Council and work has begun on those projects.

In reference to the 319 project, Mr. Kinghorn mentioned that there was some damage to the pond from the storm and an overtopping had occurred at some point. Mr. Larson indicated that the County and City are aware, as Dr. Gray reached out to them by email. Paul Moore, design engineer for the project, will be part of the upcoming staff meeting.

**C. Stormwater Implementation Committee (SWIC) Report – Eric Larson**

Please reference the report which is included in the posted agenda. No additional updates.

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

In reference to item #3, part of the five year operations plan and justification for the rate increase was to expand our services and purchase equipment. The County has been testing street sweepers to find one to add to the fleet that will meet the needs of MCM6 and MS4 program and help maintain our porous paver parking lot (at the Administration Building).

**E. Professional Contracts Report – Eric Larson**

Mr. Larson indicated he is in regular communication with Joe Mina from ATM (consultant) and the Stormwater Master Plan is still on schedule to be completed by December. There will be a SWIC meeting in the near future to go over the report Mr. Mina is working on. Mr. Don Smith asked if the consultant is looking at the overtopping areas. Mr. Larson said they are revisiting them to see if those constrictions still exist in the system.

Mr. Larry Meisner mentioned that had heard that there was overtopping near Old

Sheldon Church during the most recent storm (Irma). Mr. Larson indicated he would take note of that happening.

In reference to item #3, the project for Brewer Memorial Park, the meeting with Clemson is scheduled for September 21, 2017.

**F. Regional Coordination – Eric Larson**

In reference to item #5, discussions are taking place on how it is going to be formally brought forward with administration and decision makers within the County, Towns and City.

The Wallace Road project is moving along quickly to help solve some flooding problems (houses and roads). Emergency pumps are being used to keep water off of structures, which is not Irma related. Mr. Don Smith asked what the cause of the problem is. Mr. Larson explained that it is topographic, a low area with no relief. The County found that a sidewalk project done by them a dozen years ago altered drainage on the road which is the reason the County is vested in the solution.

**G. Municipal Reports – Eric Larson**

Mr. Lamar Taylor with City of Beaufort mentioned the regional drainage meeting was held on September 18, 2017 and that their current projects will resume in a couple weeks once debris cleanup is complete.

Mr. Scott Liggett with Town of Hilton Head said the impact from the storm surge was quite remarkable, short lived in many areas. It was more prevalent on the South end versus the North end. He noted that in general the storm didn't generate much debris or rainfall. Mr. Smith asked if they had about a two foot higher storm surge than Matthew. Mr. Liggett explained that since Matthew occurred at night they do not have the documentation and footage like they do with Irma. He said based on observation the front/ocean side surge was much less than on the back side of the island. Several overtoppings occurred, but were short lived.

**H. Municipal Separate Storm Sewer System (MS4 Update) – Eric Larson**

Mr. Larson noted that you can see activity is slowly increasing from past reports, a reflection of the workload that the new MS4 has created. In reference to public education item 5B, the bi-annual pond conference will be held at USCB campus on October 19th. There will be a great panel of speakers and lunch is also included in the fee.

**I. Maintenance Projects Report – No Report**

Due to recovery efforts from Hurricane Irma, the report will be included with the update for the meeting scheduled on October 18.

**5. Unfinished Business – None.**

**6. New Business**

**A. Update from City of Beaufort on Mossy Oaks Drainage** – This item will be discussed along with agenda item 6C.

**B. Proposed Revision to County Code of Ordinance Chapter 99 for Transportation**

**Exemption** – Mr. Larson provided a memo and proposal to the board to amend Chapter 99 of the County Code of Ordinance to provide transportation related facilities within the County an exemption from paying stormwater fees. In the current ordinance the County exempts public roads and private roads within a right of way, as they are understood to be for the general good of the public. The proposal is to expand that definition of transportation facilities to include facilities associated with airports, railroads and water navigation (public docks).

Mr. Marc Feinberg asked how that would impact fee collections. Mr. Larson replied that the most significant rate payers would be the Lady’s Island airport and Hilton Head Island airport. A bulk of the fees for the Hilton Head Island airport (around \$19,000) go to the Town of HHI and the Lady’s Island Airport (approx. \$13,000) fees go to the City of Beaufort, with the County receiving a CWI fee for each (around \$1000 from HHI and approximately \$750 from LI). The boat landings contribute about \$16,000 total to the utility; most of them are unincorporated, with a few within the municipalities. The Port Royal Port, if it is private, they would pay fees, but if it was deemed to be publicly owned and operated they would be exempt.

Mr. Feinberg asked if the Town of HHI and City of Beaufort are in favor of losing that amount of money. Mr. Kinghorn asked if discussion has happened. Mr. Larson apologized and said it has not and this is an opportunity for discussion. Mr. Taylor suggested holding off until a discussion can take place in different form and bring it back to the Board.

Mr. Liggett mentioned that the fees are meant to address the demands that these public systems place on the drainage infrastructure. He said to indicate that to say the Town has provided no service on the airport property would be inaccurate, there here has been several times in the past that they have provided service and expressed that the demands don’t go away just because the fees have.

Mr. Smith asked where the request for changes came from. Mr. Larson indicated it was a staff request from the airport. Mr. Kinghorn suggested waiting until the Town of HHI and City of Beaufort administration review it and weigh in on it. Mr. Larson stated he is available to have a meeting to discuss the proposal.

A motion was made to defer this discussion to next month. The Board unanimously (5:0) approved to defer until next month.

[The memo and proposed revisions regarding County Code of Ordinance Chapter 99 are attached.](#)

**C. Regionalization of Stormwater** – Mr. Larson wanted to brief the public and board as a result of some things that have been going on regionally regarding stormwater. He shared vision casting for the future of stormwater. [Vision Casting Stormwater – September 2017 attached.](#)

Following vision casting for stormwater lengthy discussion took place.

Mr. Marc Feinberg asked if he is correct in understanding that the MS4 standards that EPA has set are not any different if you are in Bluffton or in Beaufort. Mr. Larson answered correct.

Mr. Feinberg shared that he had a conversation with Mr. Kubic, when he first became a Board member, about there being so many MS4 coordinators and that there may eventually be some economies of scale. Mr. Larson explained the state’s MS4 permit is the same for each municipality; it is generalized and states the goals of the program. The way you achieve those goals can be much different, such as bare minimum or to go above and beyond. He explained there are multiple jurisdictions, so there is economy of scale that could be found because the jurisdictions are so interwoven. Being able to coordinate operations and maintenance across

multiple jurisdictions and having the ability to combine resources and fund capital projects together allows for projects to happen that can't be done on their own.

Mr. Liggett expressed that it would be a challenge to have identical and equivalent extent and level of services. He mentioned there is desire to do different things within each of the political subdivisions within the County. Mr. Kinghorn asked why they couldn't be they be the same. Ms. Kim Jones explained that the Town of Bluffton has been focused on elimination of septic tanks for fecal coliform contribution, using funding for microbial source tracking and identifying failing septic tanks effecting May River, while a majority falling within the County's jurisdiction. She indicated that Mr. Larson has made it known that that is not a priority for the County, but is to their (Bluffton's) Council.

Mr. Larson said it doesn't mean that the County can't change programs and he would like for everyone to quit looking backward. He indicated Ms. Jones and Mr. Liggett are correct; that Hilton Head is developed out and they are focused on redevelopment, the City of Beaufort has a downtown core that is focused on redevelopment, and the Town of Bluffton is focused on septic issues. This doesn't you mean you can't have a regional authority and not have different goals for different regions within the County. Mr. Larson expressed the need to think regional. He explained there could be a regional authority that would have a standard to address everyone's concerns in respect to urban development, redevelopment, rural expansion, and septic issues.

Mr. Kinghorn noted that the BJSWA example would be similar and believes it works well, explaining that the sewer service from the City of Beaufort's perspective is much better than if they would have stayed as a separate entity.

Mr. Feinberg asked how representation of this governing body be divided. Mr. Larson explained that it would be best to bring outside party in to assist. An exploratory committee could be formed to provide an objective assessment of what we have and how we can get there.

Mr. Smith asked if anyone has spoken with somebody that is part of a regionalized stormwater program. Mr. Liggett suggested looking into what Charleston does, as they are similar to Beaufort County with watersheds and islands or even look to Columbia metro or Greenville and see how their MS4s are interacting. He mentioned it is important to understand the problems regionally that are trying to be solved, how different or similar the codes and standards are, annexation issues, and how influential stormwater standards are.

Mr. Smith asked if the municipalities are willing to go back and discuss this with counter parts, staff, and politicians and come back next month and discuss it.

Mr. Larson mentioned that the Southern Regional Planning committee recognizes that development is moving to Jasper County and there is a desire (prompted by elected officials) to coordinate regionally. From his perspective there are regional issues regarding the Okatie River, as Bluffton has a small portion under their jurisdiction, the County has a larger portion and there is a TMDL for bacteria. The Okatie also crosses over into Jasper, where there is a proposed development. This got the County interested to talk to other players because there is a goal to reduce bacteria by 52% and the County only has control of less than 50% of the watershed in their jurisdiction. The County has started to look at everyone's standards to be able to compare them. A committee has been put together.

Mr. Lamar Taylor asked if there is a law that prevents the board from being regional. Mr. Larson mentioned that the ordinance that was set up in 2001 intended to be regional and that he thinks State law will allow it. He indicated that if anything mentioned today goes forward, the ordinance would have to be appealed; the article regarding the makeup of the board would need amended.

Ms. Alice Howard noted that the BJSWA was a perfect example. She expressed that regionally there is an opportunity to reduce failures by consolidating compliance.

A motion was made to add this topic to next month's agenda. The Board unanimously (5:0) approved to add this topic to next month's.

After voting, discussion continued:

Mr. Liggett expressed that a challenge will be to generate a meaningful response in less than 30 days; how would you reconstitute the utility and do it differently when the utility over the last 20 years has been a good thing. The Town of Hilton Head has been able to put in new infrastructure, deliver services agreements and return the fees and services internally to the gated community which is important to the Town, as well as improve the water quality by five levels since 2001 in the Broad Creek.

Mr. Smith noted he has a lot of questions as he represents a rural community and the residents there wouldn't be interested in paying more to subsidize all of the development going on in other areas which have larger needs. The extent of service they receive is typically getting the ditches cleaned. He is interested in how fees would be set.

Mr. Liggett stated they can attempt to respond, as Mr. Larson shared his thoughts. There are a lot of different facets to the program, whether it stays the same or becomes regionalized.

Mr. Larson suggests forming an exploratory committee with representatives from the municipalities to come up with the questions that need answered. He said we need to start somewhere and feels it's a good time to start, as the City of Beaufort wanting a regional task force for a problem and the southern part of the County is wanting to partner with Jasper County.

**7. Public Comment(s) – None.**

**8. Next Meeting Agenda – Approved.**

Additions to Old Business –

- Proposed Revision to County Code of Ordinance Chapter 99 for Transportation Exemption
- Regionalization Update

**9. Meeting Adjourned**



**BEAUFORT COUNTY STORMWATER UTILITY**  
**120 Shanklin Road**  
**Beaufort, South Carolina 29906**  
**Voice (843) 255-2805 Facsimile (843) 255-9436**  
**wstormwater@bcgov.net**



**M E M O R A N D U M**

**TO:** Beaufort County Council  
Beaufort County Stormwater Utility Board  
Gary Kubic, County Administrator

**FROM:** Eric W. Larson, PE, AICP, CPSWQ, CFM

**DATE:** September 21, 2017

**SUBJECT:** A proposed revision to Code of Ordinance Chapter 99 related to Stormwater service fee exemptions for transportation infrastructure, specifically County owned facilities

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Traditionally, the County's Stormwater ordinance has had exemptions to the requirement to pay Stormwater utility fees, or service fees, for public roads. It also exempted private roads within defined rights-of-ways, condominium boat slips, and railroad tracks. (See Section 99-109). However, it should be noted that there are other public transportation infrastructure that function similarly to roads in that the population as a whole benefits from the construction and maintenance of said facilities. In particular, municipal airport facilities and public boat ramps and docks provide a transportation function interconnected with the vehicular roadway system, moving people and goods for business and leisure.

It should be noted that in the case of the County operated airports, each facility has a comprehensive stormwater management plan and are permitted with the South Carolina Department of Health and Environmental Control as an industrial facility. As such, each facility expends significant funds annually for compliance and does not rely on the respective municipal jurisdictions for Stormwater related services. In addition, the stormwater system at the Hilton Head Island Airport is undergoing a ~\$5,000,000 improvement project that is being funded by the Federal Aviation Administration, the South Carolina Aeronautics Commission, and the Airport itself. This system receives stormwater from an offsite light industrial/commercial area on the island, treats the stormwater, and releases it at the opposite end of the airport. The airport maintains this system expending its own funds.

Our County Stormwater Ordinance only exempts roadways and railroad tracks. The attached proposed amendment expands the exemptions allowed by ordinance to include airports, boat ramps and docks, all railroad related properties, and the associated facilities that support and maintain them.

Sec. 99-109. - Exemptions and credits applicable to stormwater service fees.

Except as provided in this section, no public or private property shall be exempt from stormwater utility service fees. No exemption, credit, offset, or other reduction in stormwater service fees shall be granted based on the age, tax, or economic status, race, or religion of the customer, or other condition unrelated to the stormwater management utility's cost of providing stormwater programs, services, systems, and facilities. A stormwater management utility service fee credit manual shall be prepared by the Stormwater Manager specifying the design and performance standards of on-site stormwater services, systems, facilities, and activities that qualify for application of a service fee credit, and how such credits shall be calculated.

(a) Credits. The following types of credits against stormwater service fees shall be available:

- (1) Freshwater wetlands. All properties except those classified as detached single-family dwelling units may receive a credit against the stormwater service fee applicable to the property based on granting and dedicating a perpetual conservation easement on those portions of the property that are classified as freshwater wetlands and as detailed in the stormwater management utility service fee credit manual. The conservation easement shall remove that portion of the subject property from any future development.
- (2) Salt Water Marsh. All properties except those classified as detached single-family dwelling units may receive a credit against the stormwater service fee applicable to the property based on those portions of the property that are classified as salt water marsh and as detailed in the stormwater management utility service fee credit manual.
- (3) Submerged properties. All properties may receive a credit against the stormwater service fee applicable to the property based on those portions of the property that are classified as submerged and as detailed in the stormwater management utility service fee credit manual.
- (4) Those properties that apply for consideration of an adjustment shall satisfy the requirements established by the Beaufort County Stormwater Manager and approved reduced stormwater service fee.

(b) Exemptions. The following exemptions from the stormwater service fees shall be allowed:

- (1) Improved public road rights-of-way that have been conveyed to and accepted for maintenance by the state department of transportation and are available for use in common for vehicular transportation by the general public.
- (2) Improved public road rights-of-way that have been conveyed to and accepted for maintenance by Beaufort County and are available for use in common for vehicular transportation by the general public.
- (3) Improved private roadways that are shown as a separate parcel of land on the most current Beaufort County tax maps and are used by more than one property owner to access their property.
- (4) Railroad tracks, railroad stations, maintenance buildings, or other developed land used for railroad purposes shall be exempt from stormwater service fees. ~~However, railroad stations, maintenance buildings, or other developed land used for railroad purposes shall not be exempt from stormwater service fees.~~
- (5) Condominium boat slips shall be exempt from stormwater service fees.
- (6) Properties determined by the Assessor having 100% of the gross area of the property submerged, salt water marsh, or freshwater wetland will not receive an administrative charge, if applicable in the utility rate structure, AFTER the applicable credit defined in paragraph (a) above has been applied to the account.
- (7) Municipal airport runways, terminals, maintenance buildings, or other developed land used for airport purposes shall be exempt from stormwater service fees.
- (8) Public boat ramps, docks, parking areas, buildings, or other developed land used for public marina purposes shall be exempt from stormwater service fees.

## **Vision Casting Stormwater Sept 2017**

Good afternoon members of the Stormwater Utility Board. Thank you for this opportunity to speak today. Allow me a few minutes to cast a vision. In recent weeks, the County has been invited to the table to think and act regionally. Elected officials south of the Broad River and Jasper County have reconstituted the Southern regional planning committee. Shortly after electing a chairman, their first item of business was stormwater. In that room, the Mayors and County Council chairmen made comments like "Standardization of stormwater requirements" and "creating the highest standards possible to protect the environment." North of the Broad River, the City of Beaufort, at the request of local and state elected officials, asked for the formation of a Special task force to address stormwater issues in the Mossy Oaks subdivision, where the City believes the issue is multi-jurisdictional and too large of a project for the City to take on alone.

Yet we are diverging. We have multiple MS4 jurisdictions in the County. It is only a matter of time before the urbanized clusters in Beaufort and Jasper County, who have the population density to qualify as an MS4, will be designated and permitted by DHEC. We could see 8 separate MS4 permits with differing standards if we don't change our way of thinking. Example of this divergence can be seen now. The County updated its BMP Manual last year. Although we invited feedback from the municipalities, it was pretty much developed in a silo. The Town of Bluffton is currently considering updating its standards. In addition, The Town of Bluffton has the May River Watershed advisory committee that meets monthly. In conversations with Neal Desai, City Engineer for the City of Beaufort, he tells me the City fully intends to develop its own stand-alone stormwater standard. We are duplicating efforts and in some cases driving a wedge between jurisdictions and encouraging jurisdiction shopping by developers, who are looking for the cheapest and easiest way to make a profit.

We need standardization of services and regulations. We are duplicating services to the community and unnecessarily driving up costs to our rate payers. We don't have to look far for examples of regionalism. Our own Beaufort Jasper Water and Sewer Authority acts as a quasi-governmental yet stand alone "utility" that is self-funded and provides services over multiple jurisdictions. I have first-hand knowledge of other examples such as the Sanitation District #1 in Northern Kentucky that provides consolidated Sanitary and Stormsewer services over 3 counties and 20+ municipal governments. Louisville Kentucky's Metropolitan Sewer District provides Sanitary and Stormwater services for the entire Metropolitan Statistical Area of Louisville encompassing numerous cities, towns, and villages within Jefferson County. In my last job as a City Engineer and MS4 manager, my community was part of a regional alliance consisting of 7 MS4s across 6 counties. There are countless others across the nation that are set up similarly. Given the geography of the region, our Metropolitan Statistical Area will never extend to the Charleston area or cross state lines to Savannah, so Beaufort and Jasper Counties need to consider the idea that 1 program is better than 8.

This Board was originally envisioned to be regional. Early drafts of the ordinance gave voting rights to all municipalities equally. I do not think it was ever the intent to have 5 MS4 programs in one county. There apparently was not the political will to make that happen. As evident by the recent meetings of the SoLoCo and City Task Force, I think that will has changed it now is the time to act. It is no accident that DHEC withheld review of the County's and the Town of Hilton Head Island's MS4 permit applications nearly 6 months until the Town of Bluffton submitted their permit application. DHEC reviewed the permits concurrently and issued identical permits on the same time schedule. They too saw the value in regional partnership and encouraged us to partner to implement the permits.

We need to re-think what we've done in the past. We have resources at our disposal. The Center for Watershed Protection is nationally recognized as a leader and vision of the future of stormwater. The County's volume control standards are based on their principles. Bill Hodges, retired Stormwater Engineer for Savannah and former board member now works for the Center and lives right here in Bluffton. He is currently negotiating a contract with the Town of Bluffton for their code update. I am

confident I could bring my colleagues from KY to the table to offer advice on how to set up a regional authority. We need to set up an exploratory committee to engage with a consultant and begin thinking through what a regional authority might look like. Questions that need answers range from how a regional authority affects the differing SWU fee rates across the County to what happens to the staff and assets owned by each jurisdiction if individual stormwater departments are eliminated in lieu of a new utility.

This is what Gary Kubic hired me for four years ago. I am not asking for a vote today, but I am recommending that this Board consider this, ask the municipalities to discuss this idea among themselves and come back in October and ultimately recommend to the county and municipal governments of Beaufort and Jasper Counties to begin these discussions, set up a task force, and let's flesh out the details of what a regional stormwater authority might look like.

If we aren't willing to look at this and be proactive about the future, then we need to rethink the constitution of this Board to be a County Board only and quit operating under this thin veil of partnerships, all the while we continue to diverge in our missions to protect water quality in this region.

Thank you for your time.



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October 18, 2017

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

Utility Update

1. Tax Run 2017 – The bills are on schedule to be released on October 31, 2017. Stormwater staff completed the billing process and submitted data to the Auditor on September 29, 2017.
2. Southern Regional Planning Committee – The Southern Regional Planning Committee, or Southern Lowcountry Committee (SoLoCo), technical subcommittee for Stormwater met on two different occasions in October. A [summary of the meetings and the final work product](#) from the committee, a table summarizing Stormwater standards throughout Beaufort and Jasper Counties, will be provided during the meeting.
3. County Code of Ordinance Chapter 99 changes for transportation exemption – [See attached memo and draft ordinance](#) under Unfinished Business.
4. Eric Larson attended the monthly Bluffton May River Watershed Action Plan Advisory Committee (WAPAC) on 9/28/17.
5. Eric Larson attended the annual SESWA Conference on October 11, 2017.
6. Regionalization – This topic will be open for discussion under Unfinished Business. Since the topic was introduced in the September meeting, several meetings have been held among staff of the various Stormwater departments and among elected officials. These conversations have been in both Beaufort and Jasper Counties. There appears to be consensus that a regional Stormwater authority has enough advantages to begin discussing its formation in some detail. Beaufort County staff are recommending that the Utility Board vote to recommend to all its Beaufort County members, to the Beaufort County Council, and to jurisdictions within Jasper County that an exploratory committee consisting of Stormwater staff and administration of each jurisdiction to develop a conceptual business plan for consideration by the elected bodies.

Monitoring Update

1. Lab Update (From Dr. Alan Warren and Lab Manager Danielle Mickel) – Beaufort County:
  - Completion of collection and analyses of wet and dry event for the 4th quarter MS4.
  - Invoice/cost tracking for Beaufort County.
  - Data reduction/reporting.
  - Special data requests.

Town of Bluffton:

- 4th quarter MS4 samples completed.
- Coordination of MS4 sample collection as per agreement between TOB and BC.
- Data reduction/reporting.
- MOU between USCB and TOB is fully executed.
- Invoice/cost tracking for Town of Bluffton.

Palmetto Bluff:

- Monthly sampling and analyses for wet and dry events.
- Data reduction/reporting.
- Invoicing.

GEL-HHI:

- Analysis for Hilton Head Island E.coli samples 4x/Quarter, including data reduction/reporting, and invoicing.

Leamington Community:

- Quarterly collection and analyses of Leamington's stormwater lagoon system to include; data reduction/reporting, consultation and invoicing.

USCB Lab:

- Finished preventative maintenance for TOC and FS3100 instruments, requiring many updates for equipment software and replacement of parts.
- Anticipation to submit application for certification for TOC and/or Nutrients by the end of this year.
- Monthly (and as needed) calibration of equipment and instruments.
- Certification Upkeep-including review of QA/QC, logbooks, COC's.
- On-going efforts to obtain additional certification; no new certs obtained during this Qtr.
- Monthly sterility checks on Lab water for TOC, TRC, HPC, Conductivity, metals.
- Research on software for laboratory management systems.
- Account tracking for all accounts-expenditures, deposits, ledgers, PO's
- Logistics, planning, scheduling of all activities.
- Procurement of all required materials, supplies and equipment.

2. Battery Creek Watershed Pond retrofit / EPA 319 grant project – The meeting scheduled in September was postponed. The meeting was to discuss post construction monitoring data and O&M. A new date and time is pending.

### Stormwater Implementation Committee (SWIC) Report

1. The SWIC committee has not met in the last month. However, members of the SWIC attended the SoLoCo Technical Subcommittee meetings.

## Stormwater Related Projects

1. Okatie West / SC 170 Widening Retrofit (Design and Construction = \$915,000 Budget) – USACE permitting is almost complete. One of the proposed wetland impacts requires an individual permit, which required a site visit held in September. Town of Bluffton permitting is ongoing. Bidding is still on schedule for December.
2. Easements – Staff is working on numerous easement requests and meets monthly to review status. Project H will be discussed in Executive Session.
3. Staff met to discuss workload and the need for a work order prioritization system. It was decided consulting help was needed. We are soliciting proposals.

## Professional Contracts Report

1. Stormwater Management Plan (Master Plan) Update – (\$475,000 Budget; \$239,542 County portion) – ATM plans on submitting a draft CIP plan in October. The project is still on schedule for a December 2017 completion.
2. CIP FY 18 Grouping Stormwater Projects – (Design - Ward Edwards \$202,000, Andrews Engineering \$560,490, Const. est. \$5,512,900) - We have held kick off meeting with both teams. Property owners are being contacted to gain access for surveying. A kick off meeting for Forby/Sawmill is pending.
3. Clemson Extension services to Beaufort County – A meeting with Clemson and the consultants was held in September. Clemson staff will be putting together a proposed work plan. Ward Edwards will then propose an additional scope of work to assist with field work and support for the Clemson scope of work on the project.

## Regional Coordination

1. Factory Creek Watershed Regional Detention Basin “Phase I” & Academy Park Subdivision (Design Cost Est. \$49,873, Tree Mitigation Cost is pending, Construction Cost by the Developer) – This project has been revived. The developer has purchased and closed on the remaining portions of the property. He is ready and willing to sign the agreement with the County. The County is negotiating an engineering services contract with an agreed upon firm per the contract terms.
2. Factory Creek Watershed Regional Detention Basin “Phase II” (Design Cost = \$63,390, Tree Mitigation Cost is pending, Construction Cost by the Developer) – Final plans will be submitted in October to County’s SRT for administrative approval of the final stages.
3. Battery Creek Watershed Pond retrofit / EPA 319 grant project – A meeting is needed to be scheduled to discuss post construction monitoring data and O&M. The September meeting was postponed.
4. Wallace Road drainage – (Design Cost = \$5,700; Construction cost = pending) The encroachment permit application submitted to SCDOT is pending. However, additional complaints in the area have prompted the County to expand the scope of the project to

include additional properties. As a result, we are now working on an alternative solution that will not involve the encroachment permit.

5. Municipal “County” Infrastructure – The letters to ToHHI and ToB requesting “de-olution” of the infrastructure are still pending. Meetings with CoB and ToPR are also pending.
6. Beaufort County Bio-Assay lab proposal – a group of community leaders, DNR staff, and USCB faculty are supporting a concept to establish a lab in the Lowcountry to study the health of our waters and aquatic life. This is a concept that is similar to other labs along the east coast. The purpose is to build on past efforts and expand research and find solutions. A White Paper has been submitted to the state legislature to seek funding. Staff will continue to participate in the discussions and look for way to complement our program objectives.

### Municipal Reports

1. Town of Hilton Head Island (From Jeff Netzinger, Stormwater Manager and Brian Eber, MS4 Coordinator)
  - i. No information was available at the time of this report.
2. Town of Bluffton (From Kim Jones, Watershed Management Division Director)
  - i. [See attached report.](#)
3. City of Beaufort (From Neil Desai, Asst. Public Works Director)
  - i. No information was available at the time of this report.
4. Town of Port Royal (From Van Willis, Town Manager and Tony Maglione, consultant)
  - i. No information was available at the time of this report.

### MS4 Report

1. Plan Review – There were 17 projects reviewed in September by Beaufort County Stormwater staff. Due to absence of the MS4 coordinator, the County has contracted with two local engineering firms to perform plan review. Each contract is a hourly fee not to exceed \$10,000.

Project Name	Review Type	Date	Comments
Vivian’s Island Lot 14	River Buffer Waiver	9/20/17	Approved w/conditions
Sheldon Fire Station Improvements	Conceptual	9/20/17	Discussion Only
Okatie Center – Home 2 Suites	Conceptual	9/20/17	Discussion Only
Bft. Co. Schools – Whale Branch additions	Conceptual	9/20/17	Discussion Only
Grande Oaks PUD amendment	Conceptual	10/4/17	Discussion Only
Rosehill Clubhouse	Admin. Review		Corrections pending
Tanger 2 outparcel addition	Final	10/11/17	Approved w/ conditions

Belfair Activities Center	Conceptual	10/11/17	Discussion Only
26 Castle Point Rd. Rip-Rap	River Buffer Waiver	10/11/17	Approved w/conditions
Callawassie Clubhouse	Conceptual		Discussion Only
Cap Rock Senior Living	Pre-app	9/6/17	Discussion Only
BJWSA Solar Array	Admin. Review		Referred to ToPR
Bridge Pointe Condos Phase 3	Pre-app	10/4/17	Discussion Only
McCulloch Tract	Pre-app	10/11/17	Discussion Only
BMW of Hilton Head	Conceptual	10/25/17	SRT mtg. Pending
Harbor Island Lot 15	River Buffer Waiver	10/25/17	SRT mtg. Pending
Aldi Grocery Bluffton	Pre-app	10/11/17	Discussion Only

2. Stormwater Permits – There were 3 permits issued in September:
  
3. Monthly Inspection summary for September
  - a) Number of active permits = 57
  - b) Number of inspections performed = 53
  - c) Number of drainage related complaints investigated = 3
  - d) Number of IDDE issues received and investigated = 1
  - e) Number of Violations (verbal, written, fines, or stop work orders) = 3
  - f) Number of Development Permit certificates of completion = 1
  
4. Plan review tracking software – County staff has recommended the purchase of Energov software. Approval by County Council is scheduled for November. Cost is \$473,472 for the set up and first year with an annual reoccurring cost of \$125,722. Funding will be by the general fund. However, Stormwater staff is in the process of determining if SWU funds could be used. We are also considering updating the Stormwater permit fee to support the annual cost.
  
5. Consulting for MS4 Coordinator – Due to the absence in this position, the County has contracted with ATM to provide service one (1) day per week to support the ongoing MS4 program needs. The contract is currently for 12 weeks and costs \$19,825.
  
6. Public Education – Lowcountry Stormwater Partners (LSP), via Carolina Clear, continues to work on several initiatives towards public education and outreach.
  - a) Upcoming Events:
    - i. Registration for the 2017 Beaufort Area Stormwater Management Pond Conference/Workshop that will be held on October 19, 2017 is open. <http://www.clemson.edu/extension/carolinaclear/regional-consortiums/lsp/2017BeaufortAreaPondConference.html>
      - Event Time: 8AM-4PM
      - Location: USCB Gateway Campus - Campus Center (Multi-purpose Rm) & Library Rm 267/237
      - Expected number of participants: 100

- Parking: Free
- ii. Ellen Comeau and Eric Larson spoke at the 2017 SESWA conference in Louisville, KY on October 12<sup>th</sup>. The topic was statewide Public Education and Outreach programs and featured the LSP.



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(b) Exemptions. The following exemptions from the stormwater service fees shall be allowed:

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ACTIVITY - POLICY	STATUS
May River Watershed Action Plan Update (Grant award of \$55,000 in 2017)	To be completed with direction and input from staff, the public, Water Quality Technical Advisory Committee, May River Watershed Advisory Committee, and Town Council. Notified verbally on 4/7/17 that due to anticipated Federal Budget cuts to the EPA, SCDHEC rescinded the grant. <b>Action Plan Update is currently planned for completion in FY19.</b>
Sewer Connection Policy	WAPAC adopted Sewer Connection Policy framework 9/22/16. Staff presented information for consideration and recommendation to Town Council during 6/22/17 meeting. Town Council provided feedback at 7/18/17 Workshop to develop a Sewer Connection Policy. <b>A draft Policy recommendation from WAPAC was presented to Council at 9/26/17 meeting.</b>
ACTIVITY - PROJECTS	STATUS
Sanitary Sewer Extension	Buck Island/Simmons Road (BIS) Phases I, II, III and IV are completed. Toy Fields is completed. <b>Current project updates are included in Engineering Consent Agenda under "Sewer &amp; Water."</b>
May River 319 Grant Phase 1 - New Riverside Pond (Grant award of \$483,500 in 2009)	Completed in 2013. Weekly water quality testing on-going. A statistically significant reduction in fecal coliform bacteria concentration exists pre-pond versus post-pond. However, bacteria levels re-load to previous levels prior to discharging into the May River. This leads to management decisions with BMP placement as well as BMPs in-series to maintain bacteria reductions.
May River 319 Grant Phase 2 - Pine Ridge (Grant award of \$290,000 in 2011)	Completed. In post-construction monitoring phase to assess project efficacy.
May River 319 Grant Phase 3 - May River Preserve (Grant award of \$231,350 in 2016)	This project includes construction of a shallow pond known as a Green Tree Reservoir. <b>Current project updates are included in Engineering Consent Agenda.</b>
Stoney Creek Wetlands Restoration: Preliminary Design Phase	Wetlands restoration project with the goal to reduce stormwater volume reaching the May River. <b>Current project updates are included in Engineering Consent Agenda.</b>
May River Watershed Water Quality Model	Preliminary 2002 Palmetto Bluff Duck Pond Drainage area watershed model complete. Completed New Riverside BMP model for comparison to field observations. Rose Dhu Creek sub-watershed "Existing Conditions" portion of the Headwaters Water Quality Model is underway. <b>Currently proposed for completion in FY19-20 following the Action Plan Update.</b>
ACTIVITY - FINANCIAL	STATUS
Additional Funding Opportunities	No updates.

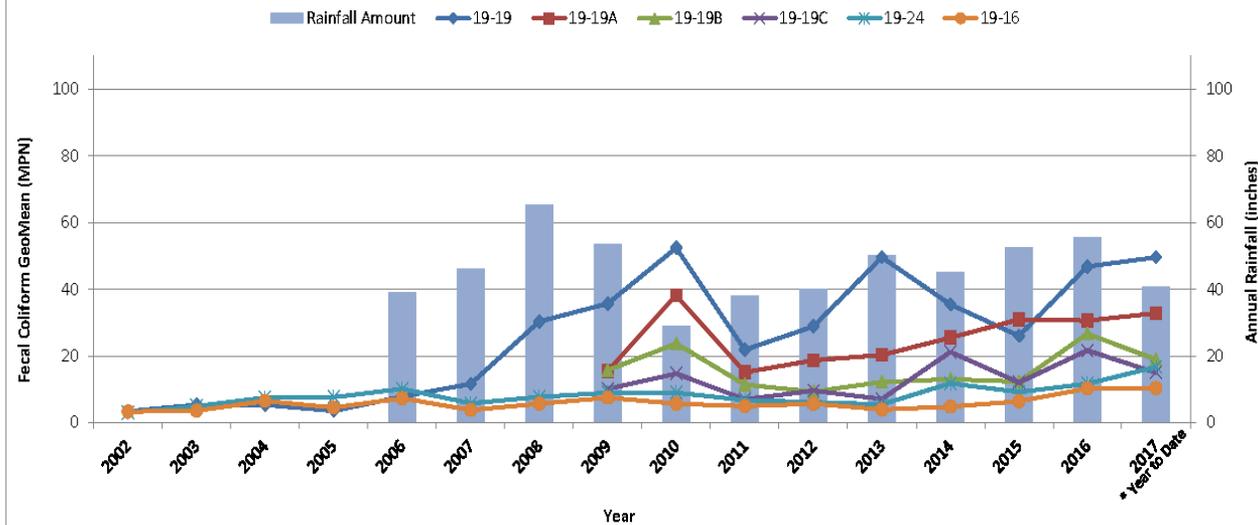
ACTIVITY - PROGRAMS	STATUS
Public Outreach/Participation/Involvement (MS4 Minimum Control Measure #1 & 2)	Outreach and involvement efforts continue through county-wide partnership with Carolina Clear as Lowcountry Stormwater Partners - Neighbors for Clean Water and through local cleanups and civic engagements and the May River Watershed Action Plan Advisory Committee. <b>Current updates are included in Engineering Consent Agenda and Attachment 9.</b>
Water Quality Monitoring Program (MS4 Minimum Control Measure #3)	<ol style="list-style-type: none"> <li>1. SCDHEC Shellfish monitoring results</li> <li>2. Fecal coliform bacteria "hot spot" concentrations</li> <li>3. Microbial Source Tracking of human sources of bacteria</li> <li>4. Illicit Discharge investigation and monitoring</li> <li>5. BMP efficacy monitoring</li> <li>6. MS4 monitoring</li> </ol> <b>Current updates are included in Engineering Consent Agenda Attachments 2, 3b, 3c, and 3d.</b>
Infrastructure Mapping/GIS (MS4 Minimum Control Measure #3)	Data points continue to be collected with new development to meet MS4 requirements & populate water quality model. <b>Current updates are included in Engineering Consent Agenda Attachment 3a.</b>
Sediment & Erosion Control Program (MS4 Minimum Control Measure #4)	Sediment and erosion control inspections with escalating enforcement response. <b>Current updates are included in Engineering Consent Agenda Attachment 4.</b>
Development Plan Review Program (MS4 Minimum Control Measure #5)	SCDHEC delegated plan review-related activities. <b>Current updates are included in Engineering Consent Agenda Attachment 5.</b>
Ditch Inspection/Maintenance Program (MS4 Minimum Control Measure #6)	Continued coordination with SCDOT, Beaufort County and Town Public Works to inspect and maintain ditches within the Town's jurisdiction. Town is initiating an easement acquisition program. <b>Current updates are included in Engineering Consent Agenda Attachment 6 and under "Public Works."</b>
Septic System Maintenance Program	FY18 funding is \$10,000. On-going assistance offered to Town residents regardless of financial status through Neighborhood Assistance Program. <b>Current updates are included in Engineering Consent Agenda Attachment 7.</b>
Sewer Connection Program	In FY18 Council allocated \$200,000 for a Sewer Connection Program as well as \$10,000 for assistance to connect income-qualified individuals to existing sanitary sewer as part of the Neighborhood Assistance Program. WAPAC recommended possible revisions to the existing sewer connection ordinance and policy for Town Council consideration at the Town Council Workshop 7/18/17. <b>A draft Policy recommendation from WAPAC was presented to Council at 9/26/17 meeting which will guide program(s) creation.</b>

# SCDHEC Shellfish Harvesting Monitoring Data

	19-19				19-19A				19-19B				19-19C				19-24				19-16			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
	Fecal Coliform (MPN)																							
December	11.0	110.0	79.0		7.8	33.0	23.0		11.0	27.0	49.0		23.0	7.8	33.0		33.0	6.8	7.8		13.0	4.5	23.0	
November	49.0	NS	33.0		33.0	NS	13.0		17.0	NS	7.8		33.0	NS	14.0		31.0	NS	13.0		6.8	NS	33.0	
October	17.0	23.0	NS		7.8	49.0	NS		4.5	4.5	NS		6.8	23.0	NS		4.5	7.8	NS		2.0	4.5	NS	
September	27.0	46.0	23.0		17.0	17.0	110.0		2.0	9.3	23.0		4.5	17.0	13.0		4.5	23.0	4.5		2.0	4.5	7.8	
August	49.0	6.8	NS	79.0	49.0	17.0	NS	70.0	33.0	13.0	NS	21.0	70.0	13.0	NS	33.0	46.0	24.0	NS	33.0	17.0	4.0	NS	33.0
July	17.0	17.0	79.0	350.0	7.8	7.8	17.0	110.0	1.8	6.8	22.0	130.0	1.8	11.0	17.0	49.0	2.0	2.0	49.0	49.0	1.8	4.5	13.0	22.0
June	NS	33.0	79.0	23.0	NS	46.0	130.0	49.0	NS	11.0	70.0	13.0	NS	14.0	110.0	17.0	NS	4.5	33.0	7.8	NS	11.0	23.0	4.5
May	33.0	NS	70.0	17.0	33.0	NS	23.0	23.0	9.2	NS	49.0	7.8	49.0	6.8	49.0	2.0	7.8	6.8	14.0	23.0	2.0	23.0	17.0	4.5
April	130.0	1.8	23.0	7.8	79.0	33.0	23.0	23.0	170.0	17.0	13.0	4.5	240.0	17.0	13.0	7.8	23.0	13.0	7.8	13.0	13.0	17.0	1.8	4.5
March	23.0	170.0	33.0	350.0	33.0	130.0	33.0	11.0	11.0	49.0	33.0	33.0	13.0	17.0	17.0	13.0	6.8	13.0	11.0	13.0	4.5	6.8	7.8	33.0
February	110.0	13.0	23.0	13.0	33.0	14.0	17.0	7.8	79.0	1.8	13.0	13.0	79.0	1.8	11.0	9.3	33.0	7.8	6.8	4.5	13.0	2.0	1.8	1.8
January	49.0	79.0	110.0	95.0	79.0	79.0	33.0	79.0	13.0	49.0	49.0	31.0	11.0	33.0	17.0	49.0	7.8	17.0	7.8	27.0	2.0	7.8	17.0	33.0
Additional Samples																								
Additional Samples																								
Average Annual GeoMean	35.4	26.0	46.8	49.6	25.5	30.9	30.6	32.8	13.0	12.3	26.7	18.9	21.2	12.0	21.7	15.0	11.8	9.2	11.7	16.7	4.8	6.4	10.3	10.3
** Truncated GeoMetric Mean	31.0	37.0	37.0	41.0	17.0	21.0	30.0	33.0	10.0	11.0	16.0	19.0	7.0	11.0	16.0	15.0	6.0	7.0	9.0	10.0	4.0	4.0	6.0	8.0
** Truncated 90th Percentile	207.0	205.0	105.0	156.0	82.0	95.0	89.0	99.0	40.0	51.0	69.0	64.0	29.0	55.0	65.0	46.0	21.0	30.0	29.0	29.0	13.0	13.0	21.0	28.0

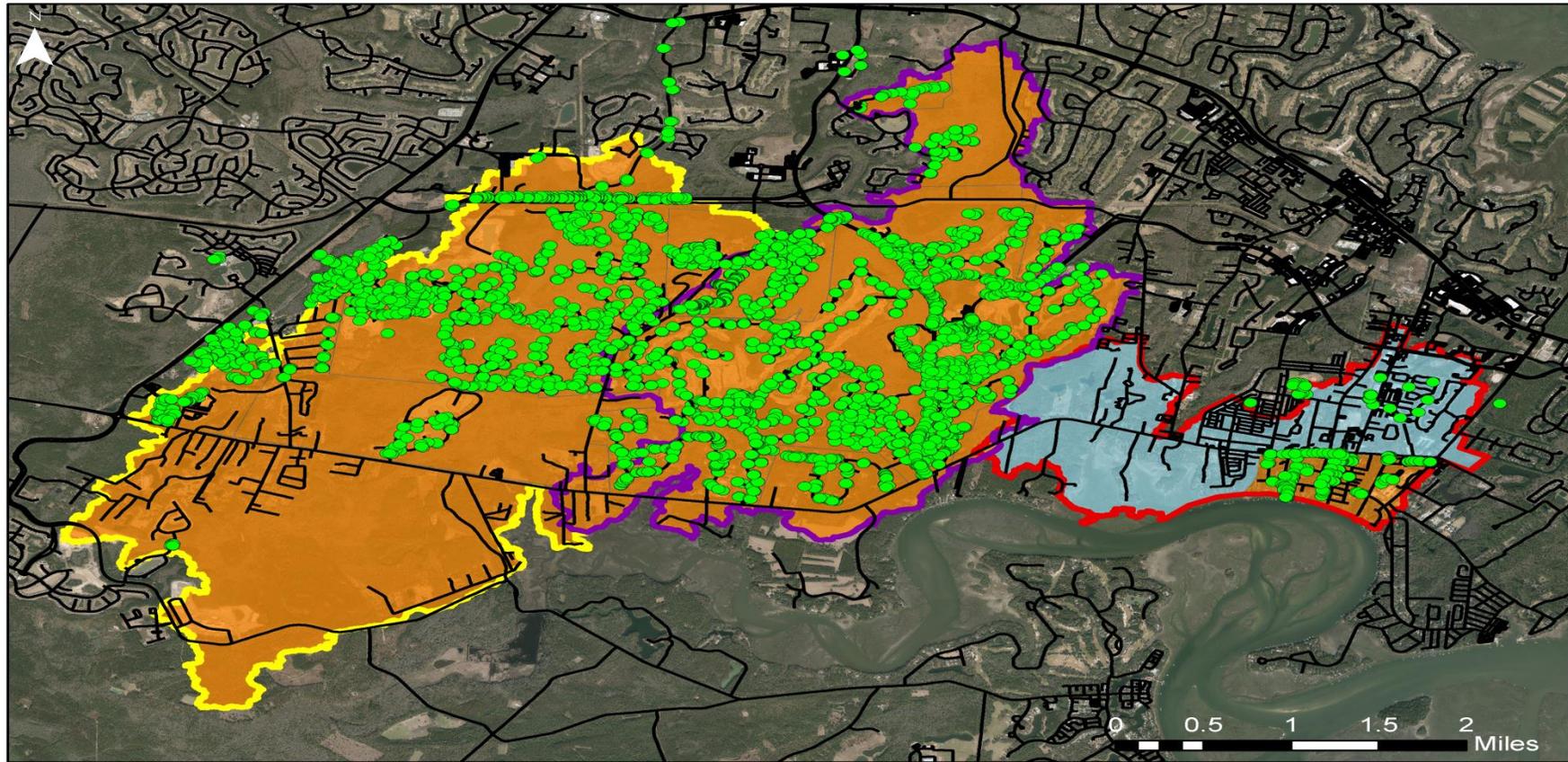
NS = No Sample  
 AS = Additional Samples  
 \*\* Town staff calculations utilizing DHEC statistics

SC DHEC Shellfish Monitoring Stations Average Annual Fecal Coliform



# MS4 Minimum Control Measure #3 – IDDE (Illicit Discharge Detection & Elimination): Stormwater Infrastructure Inventory

Stormwater Inventory Collection



**Collection Status**

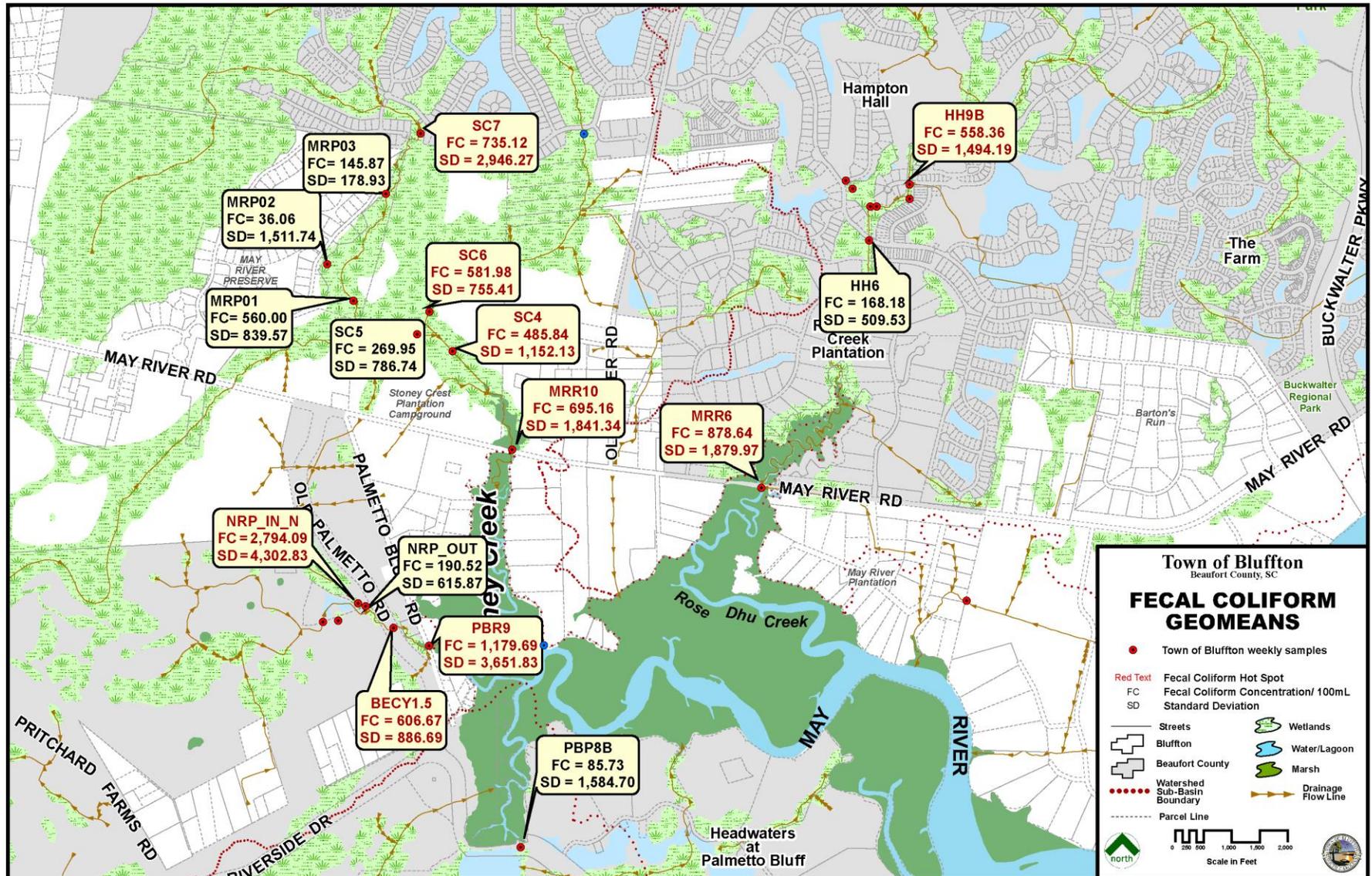
- Completed
- In Progress
- Inventoried SW Utilities
- Mid River/Old Town
- Rose Dhu Watershed
- Stoney Creek Watershed

DISCLAIMER: This map was created by the Town of Bluffton's Engineering Division and is intended to be used as a graphic representation for the Town of Bluffton. The data and information shown on this map were derived from a variety of public and private sector sources considered to be dependable. However, the accuracy, completeness and currency thereof are not guaranteed. The Town of Bluffton makes no warranties, expressed or implied, as to the accuracy, completeness, currency, reliability, or suitability for any particular purpose of information or data contained in or generated from the Town's Geographic Information System database. Additionally, the Town of Bluffton is not responsible for any use of this data, and assumes no responsibility for damages in any manner or form.

Stormwater Infrastructure Inventory Collection Status

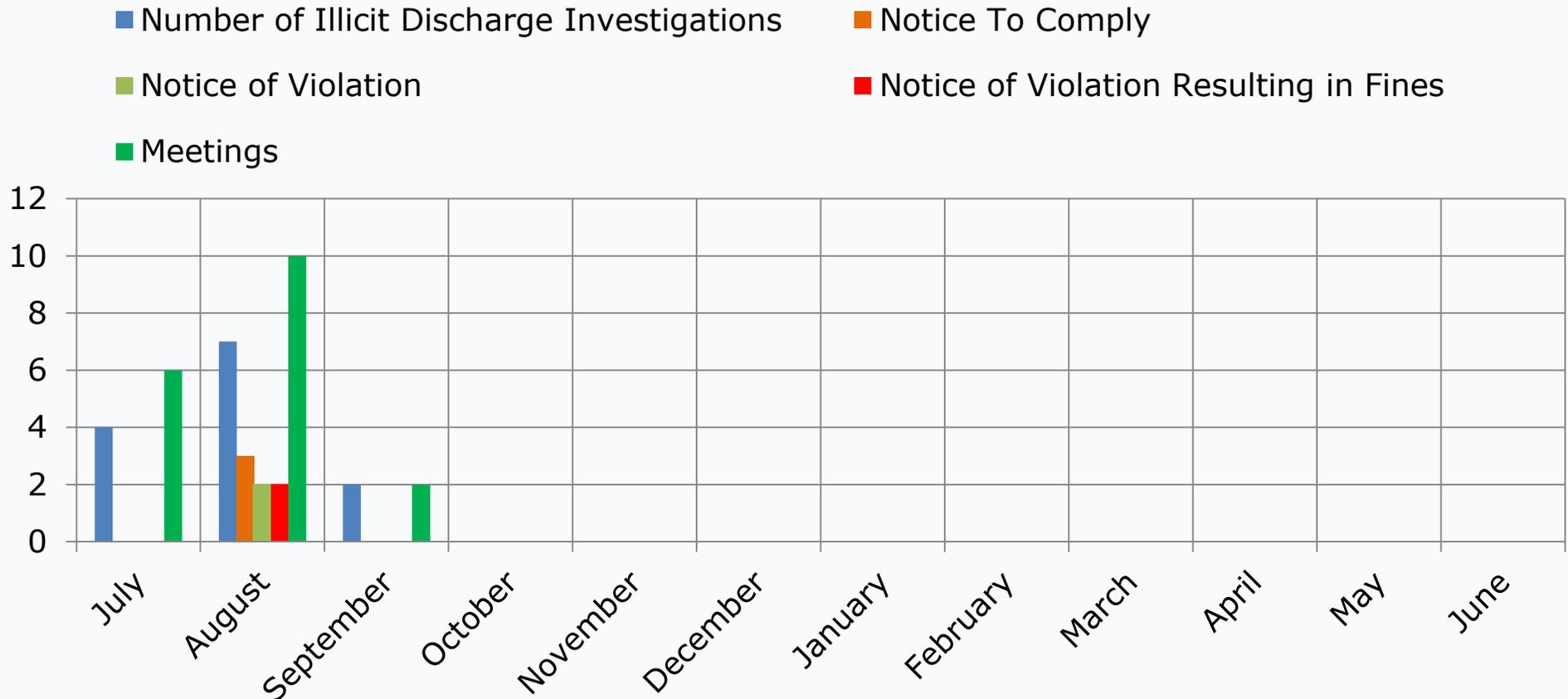
FY 2018 YTD Collection Totals	1155
FY 2017 Collection Totals	3,874

# MS4 Minimum Control Measure #3 – IDDE: Fecal Coliform Concentrations Trend Map





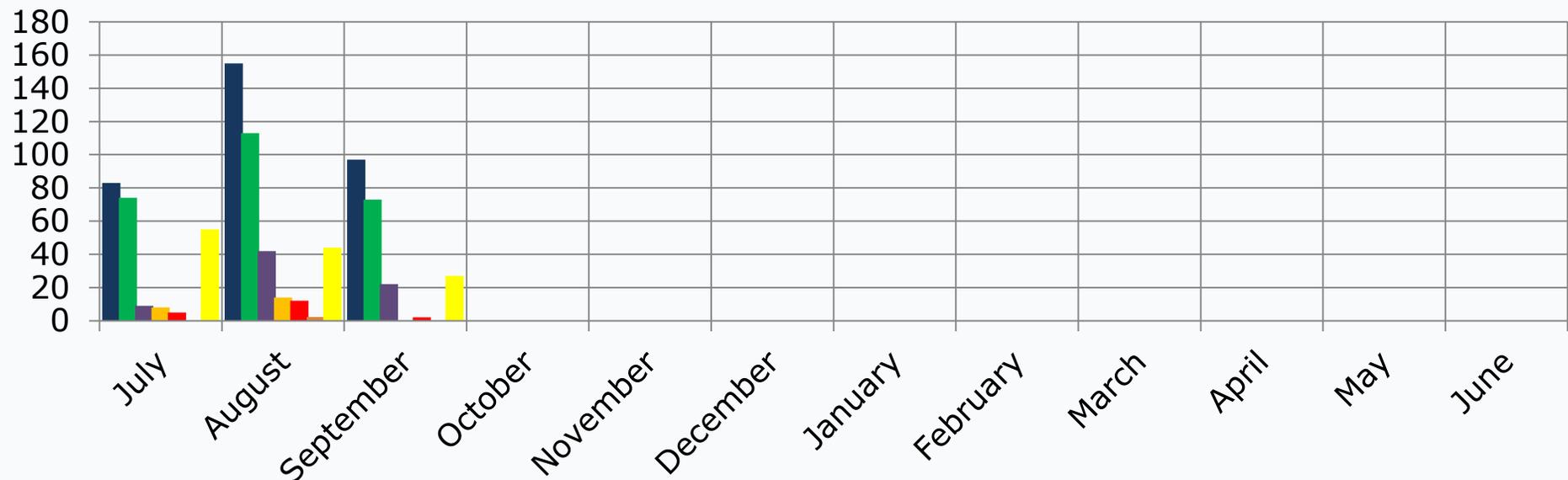
## MS4 Minimum Control Measure #3 – IDDE: Illicit Discharge Investigations



	Number of Illicit Discharge Investigations	Number of Notices To Comply Issued	Number of Notices of Violation Issued	Number of NOV Enforcement Actions	Number of Meetings
FY 2018 YTD Totals	13	3	2	2	18
FY 2017 Totals	50	19	8	13	67

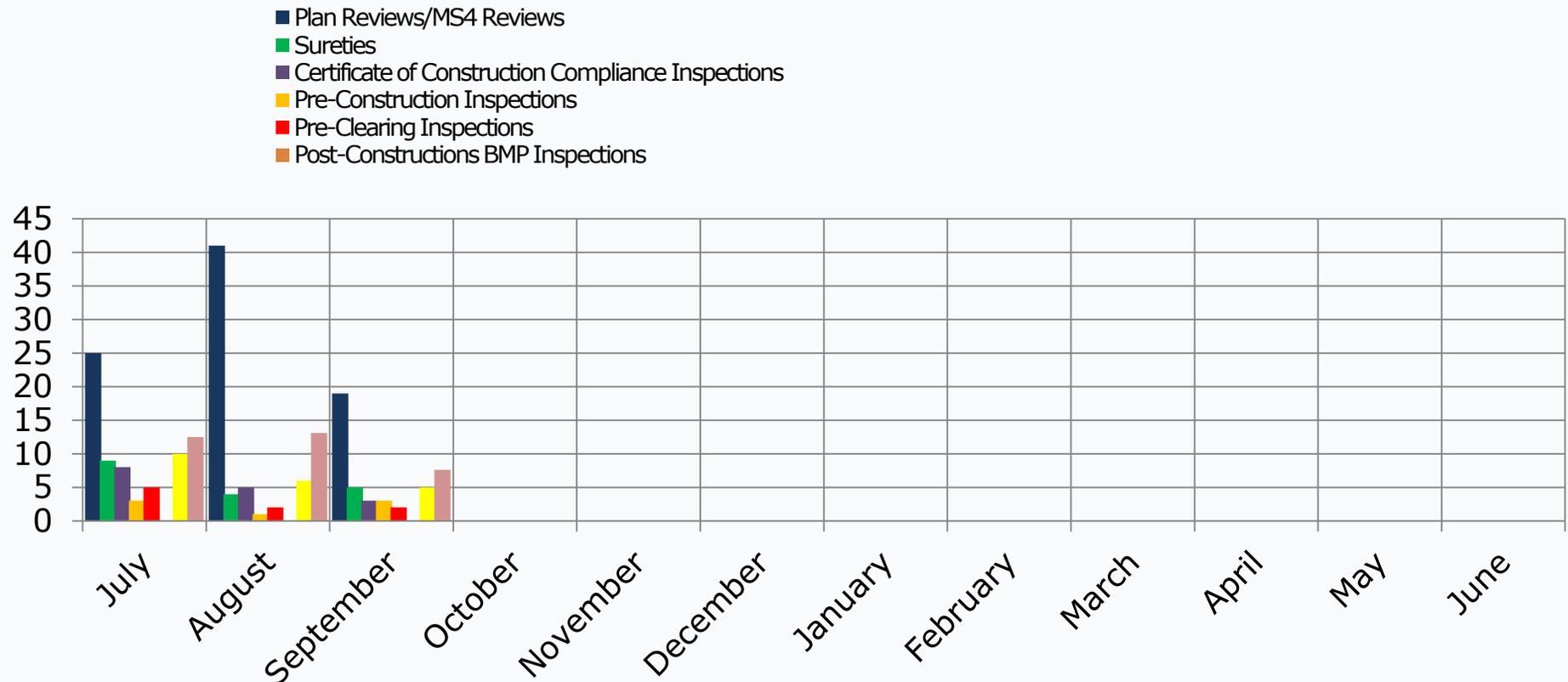
## MS4 Minimum Control Measure #4 - Erosion and Sediment Control Inspections

- Erosion & Sediment Control Inspections (E&SC)
- Number of Inspections Passed
- Number of 1st Notice To Comply (NTC)
- Number of 2nd Notice To Comply
- Number of Notice of Violation (NOV)
- Number of Fines for Notice of Violation
- Number of Erosion & Sediment Control Meetings



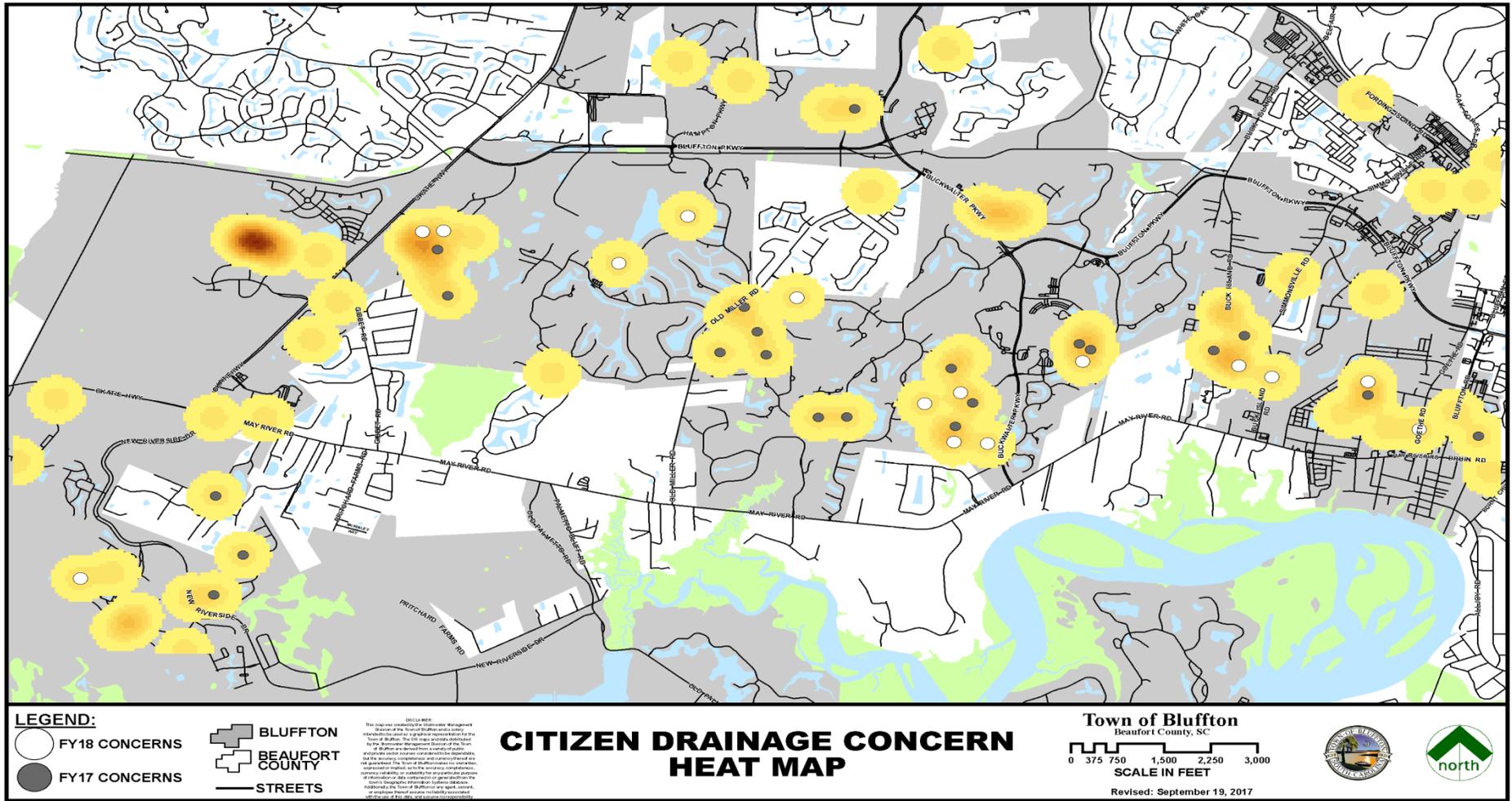
	Number of Sediment & Erosion Control Inspections	Number of Inspections Passed	Number of 1st NTC Issued	Number of 2nd NTC Issued	Number of NOV Issued	Number of NOV Enforcement Actions	Number of E&SC Meetings
FY 2018 YTD Totals	335	260	73	22	19	2	130
FY 2017 Totals	1,219	862	233	100	58	10	237

# MS4 Minimum Control Measure #5 Stormwater Plan Review



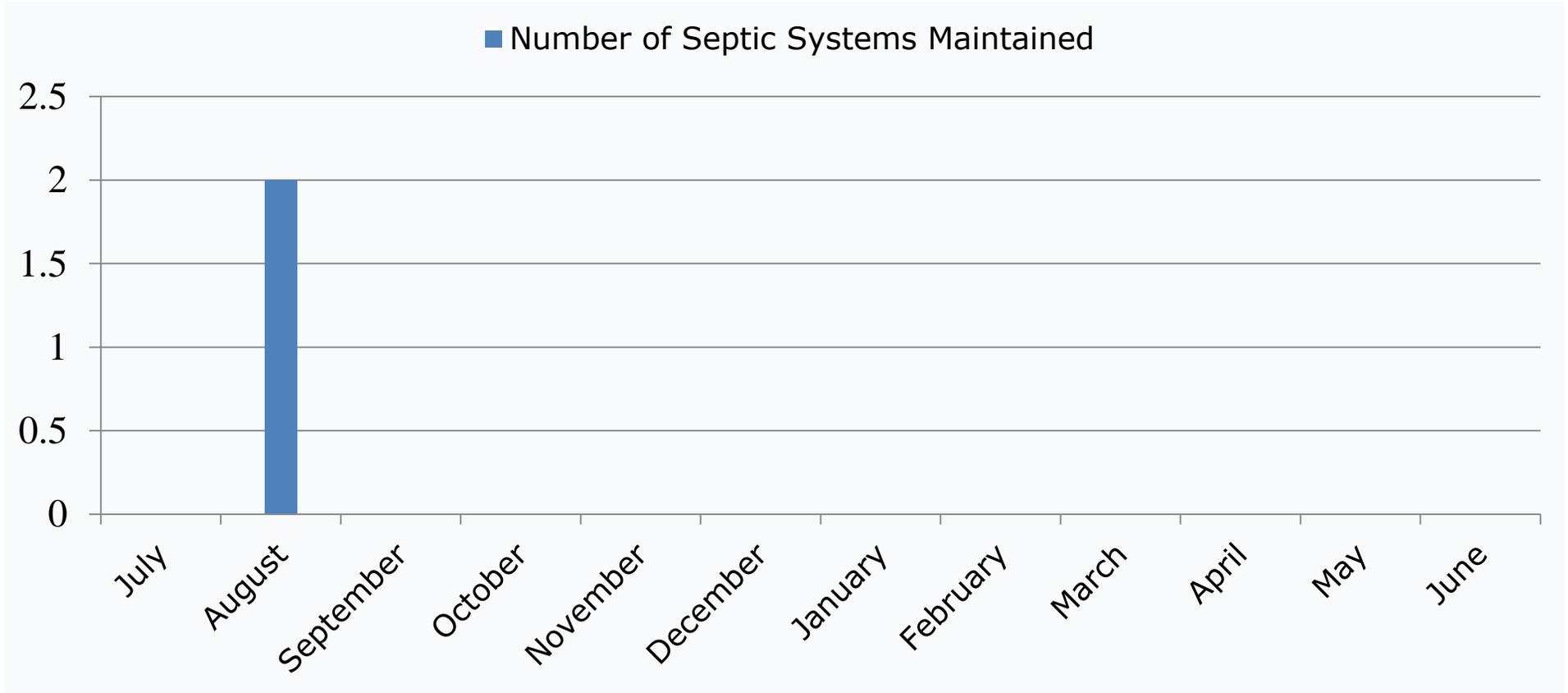
	Plan Reviews MS4 Reviews	Sureties	Certificate of Construction Compliance Inspections	Pre-Construction Meetings	Pre-Clearing Inspections	Post Construction BMP Inspections	Pre-Application Meetings	Total Plan Review Hours
FY 2018 YTD Totals	85	18	16	7	9	0	21	425 Hrs.
FY 2017 Totals	253	62	96	47	45	7	23	1,265 Hrs.

# Citizen Drainage Concern Heat Map (Drainage, Maintenance and Inspections)



	Number of Drainage Concerns Investigated	Number of Meetings
FY 2018 YTD Totals	17	25
FY 2017 Totals	72	80

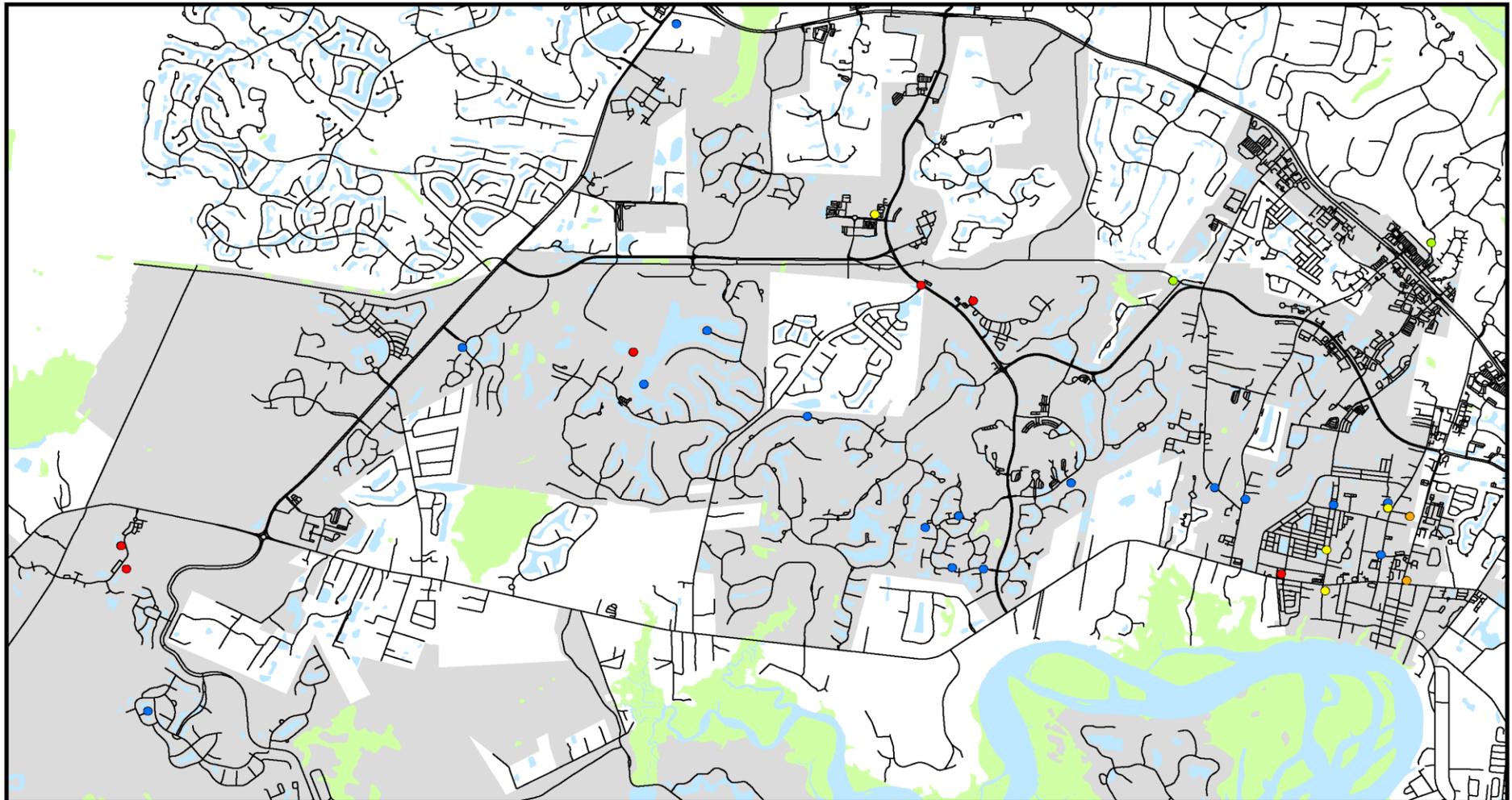
## Septic System Maintenance Assistance



	Number of Septic Systems Maintained
FY 2018 YTD Totals	2
FY 2017 Totals	18

Requests for Septic System maintenance are down due to completed connections along Jason St., Buck Island Road and Simmonsville Road as part of the Phase #3/4 BIS Sewer project.

# Citizen Request for Stormwater Services Heat Map



**LEGEND:**

- EROSION
- WATER QUALITY
- DRAINAGE/FLOODING
- INFRASTRUCTURE/MAINTENANCE
- EDUCATION/OUTREACH
- OTHER
- BLUFFTON
- BEAUFORT COUNTY
- STREETS



## CITIZEN REQUESTED WATERSHED MANAGEMENT SERVICES & ACTIVITIES MAP

**Town of Bluffton**  
Beaufort County, SC

SCALE IN FEET

Revised: September 19, 2017

DISCLAIMER:  
This map was created by the Stormwater Management Division of the Town of Bluffton using publicly available data and is not intended to be used for legal purposes. The Town of Bluffton does not warrant the accuracy or completeness of the information contained herein. The Town of Bluffton is not responsible for any errors or omissions in this map. The Town of Bluffton is not responsible for any damages, including consequential damages, arising from the use of this map. The Town of Bluffton is not responsible for any liability incurred by the use of this map, and assumes no responsibility for any other claims.

north

	Number of Citizen Requests Investigated	Number of Meetings
FY 2018 YTD Totals	14	18
FY 2017 Totals	53	82



## MEMORANDUM

Date: October 18, 2017

To: Stormwater Management Utility Board

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

Re: **Maintenance Project Report**

This report will cover two major projects and ten minor projects. The Project Summary Reports are attached.

### **Major Projects – Storm Drainage System Improvements:**

- **Toomer Road – St. Helena Island (SWUD 8):** This project improved 6,293 feet of drainage system. The scope of work included cleaning out 685 feet of channel and 5,452 feet of roadside ditch, installing one access pipe, jetting a crossline pipe, access pipe twenty nine driveway pipes and 156 feet of roadside pipe. The total cost project was **\$32,773.21**
- **H.E. McCracken Circle – Bluffton (SWUD 4):** This project improved 5,069 feet drainage system. The scope of work included cleaning out a manhole and 5,045 feet of roadside ditch, installing twin driveway pipes, jet cleaning one crossline pipe, four driveway pipes and 24 feet of channel pipe. The total cost project was **\$26,013.72.**

### **Minor or Routine Projects:**

- **Leo Green Road – Port Royal Island (SWUD 6):** The project improved 1,620 feet of drainage system. The project scope included grubbing and clearing 100 feet of workshelf, bush hogging and cleaning out 1,620 feet of channel and jet cleaning an access and crossline pipe. The total cost was **\$11,495.31.**
- **Roosevelt Avenue – Port Royal Island (SWUD 6):** The project scope included repairing washouts, installing strawmat, rip rap and hand seeding. The total cost was **\$10,451.20.**
- **Ihly Farm Road – Port Royal Island (SWUD 6):** This project improved 4,645 feet of drainage system. The project scope included bush hogging 1,182 feet of channel, 2,480 feet of lateral channel, cleaning out 723 feet of roadside ditch, 430 feet of channel and jet cleaned four crossline pipes. The total cost was **\$7,939.03.**
- **St Helena Island Valley Drains – St. Helena Island (SWUD 8):** This project improved 19,734 feet of drainage system. The scope of work included cleaning valley drains in various areas. The total cost was **\$6,919.81.**

- **Lady's Island Valley Drains – Lady's Island (SWUD 7):** This project improved 7,346 L.F. of drainage system. The project scope included cleaning valley drains in various areas. The total cost was **\$6,499.31**.
- **Forest Field Subdivision – Port Royal Island (SWUD 6):** This project improved 425 feet of drainage system. The project scope included installing one driveway pipe. The total cost was **\$6,308.65**.
- **Port Royal Island Valley Drains – Port Royal Island (SWUD 6):** This project improved 7,436 feet of drainage system. The project scope included cleaning valley drains in various areas. The total cost was **\$4,827.40**.
- **St Helena Island Vacuum Truck – St. Helena Island (SWUD 8):** This project improved 116 feet of drainage system. The project scope included cleaning eight catch basins, jet cleaning twelve driveways, five crossline pipes and 116 feet of channel pipe. The total cost was **\$4,400.18**.
- **Port Royal Island Repaired Washouts – Port Royal Island (SWUD 6):** The project scope included repairing washouts in various areas. **\$2,822.06**.
- **St Pauls Church Road – Port Royal Island (SWUD 6):** This project improved 1,844 feet of drainage system. The project scope included cleaning out 1,844 feet of channel. The total cost was **\$1,512.50**.



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

**Project Summary:** Toomer Road/Old Ben Road

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 3/20/17 - 4/13/17

Project improved 6,293 L.F. of drainage system. Cleaned out 685 L.F. of channel and 5,452 L.F. of roadside ditch. Installed (1) access pipe. Jetted (1) crossline pipe, (1) access pipe, (29) driveway pipes and 156 L.F. of roadside pipe. Hydroseeded for erosion control.

<b>2017-541/Toomer Rd-Old Ben Rd</b>	<b>Labor Hours</b>	<b>Labor Cost</b>	<b>Equipment Cost</b>	<b>Material Cost</b>	<b>Contracto Cost</b>	<b>Indirect Labor</b>	<b>Total Cost</b>
AUDIT / Audit Project	1.5	\$35.24	\$0.00	\$0.00	\$0.00	\$19.85	\$55.08
CCO / Channel - cleaned out	70.0	\$1,652.40	\$294.93	\$145.80	\$0.00	\$984.90	\$3,078.03
CLPJT / Crossline Pipe - Jetted	14.0	\$311.92	\$60.76	\$34.20	\$0.00	\$200.76	\$607.64
DPJT / Driveway Pipe - Jetted	32.5	\$734.99	\$160.58	\$158.70	\$0.00	\$475.64	\$1,529.91
HAUL / Hauling	177.5	\$3,951.81	\$1,671.58	\$551.04	\$0.00	\$2,558.83	\$8,733.26
HYDR / Hydroseeding	10.0	\$204.60	\$55.32	\$194.77	\$0.00	\$127.20	\$581.89
RSDCL / Roadside Ditch - Cleanout	421.0	\$9,983.14	\$1,917.10	\$510.01	\$0.00	\$5,777.16	\$18,187.41
<b>2017-541/Toomer Rd-Old Ben Rd</b>	<b>726.5</b>	<b>\$16,874.10</b>	<b>\$4,160.27</b>	<b>\$1,594.52</b>	<b>\$0.00</b>	<b>\$10,144.33</b>	<b>\$32,773.21</b>
<b>Sub Total</b>							
<b>Grand Total</b>	<b>726.5</b>	<b>\$16,874.10</b>	<b>\$4,160.27</b>	<b>\$1,594.52</b>	<b>\$0.00</b>	<b>\$10,144.33</b>	<b>\$32,773.21</b>

Before



During



After





Project: Toomer Road and Old Ben Road  
Map #1

Activity: Routine/ Preventive Maintenance

Project #: 2017-541

Township/SW Dist: St. Helena Island/8

Completed: April 2017

**Legend**

**Drainage Type**

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

0 60 120 240 360 480 Feet

1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print:08/01/17

File:C:\project summaries map\Toomer Road and Old Ben Road Map#1\_2017-541

Project: Toomer Road and Old Ben Road  
Map #2

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-541

Township/SW Dist:  
St. Helena Island/8

Completed:  
April 2017



Legend	
<b>Drainage Type</b>	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 420 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 08/01/17

File: C:\project summaries map\Toomer Road and Old Ben Road Map#2\_2017-541

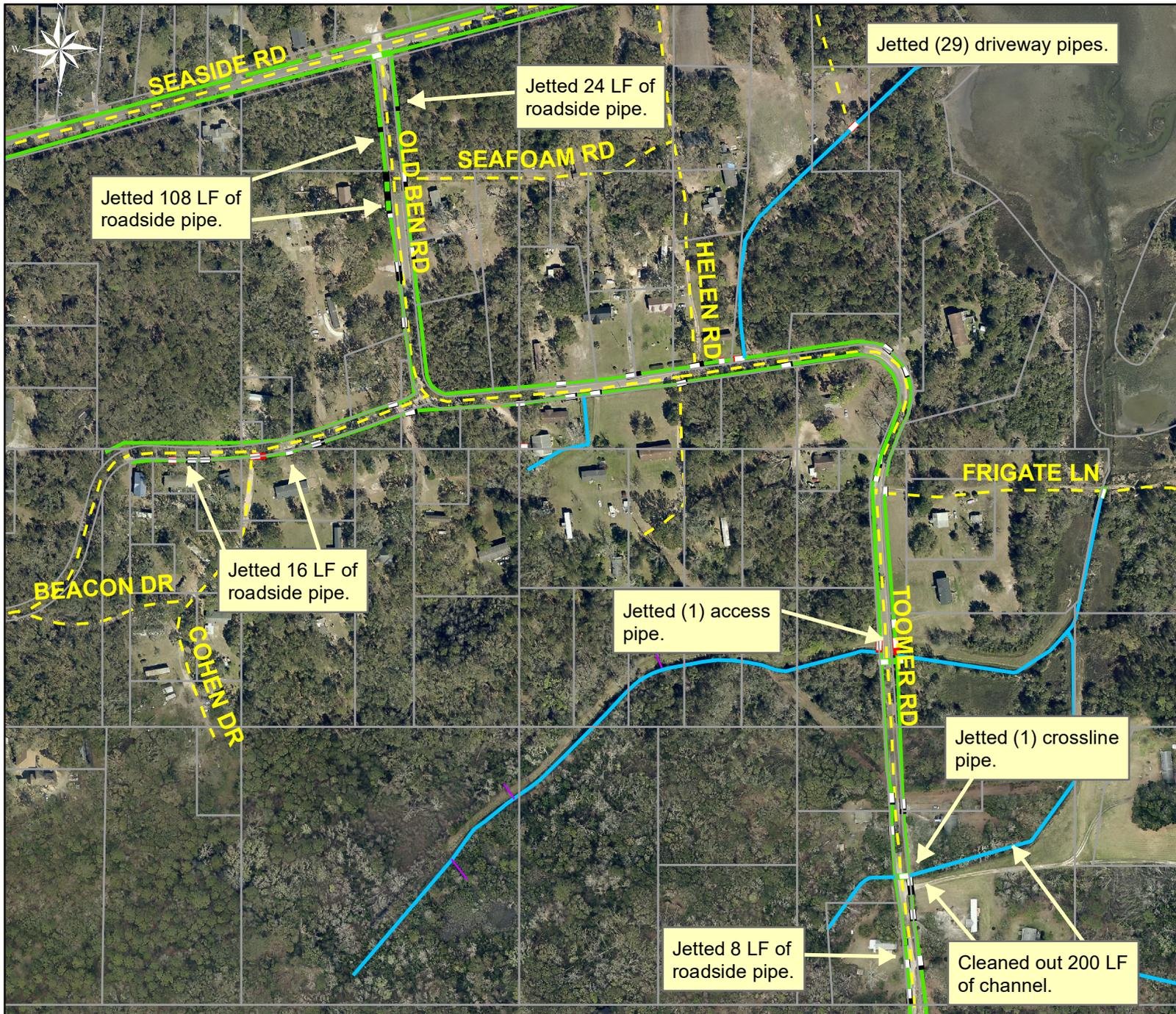
Project: Toomer Road and Old Ben Road  
Map #3

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-541

Township/SW Dist:  
St. Helena Island/8

Completed:  
April 2017



Legend	
<b>Drainage Type</b>	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 330 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 08/01/17

File: C:\project summaries map\Toomer Road and Old Ben Road Map#3\_2017-541



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

**Project Summary:** H.E. McCracken Circle

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

Project improved 5,069 L.F. of drainage system. Cleaned out (1) manhole and 5,045 L.F. of roadside ditch. Installed twin driveway pipes. Jetted (1) crossline pipe, (4) driveway pipes and 24 L.F. channel pipe. Hydroseeded for erosion control.

**Duration:** 7/26/16 - 6/19/17

<b>2017-507 / H.E. McCracken Circle</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	1.0	\$23.49	\$0.00	\$0.00	\$0.00	\$13.23	\$36.72
CLPINS / Crossline Pipe - Installed	50.0	\$1,092.10	\$259.45	\$73.15	\$0.00	\$696.00	\$2,120.70
DPJT / Driveway Pipe - Jetted	70.0	\$1,541.64	\$140.16	\$141.29	\$0.00	\$957.78	\$2,780.87
DWASPH / Driveway - Asphalt	40.0	\$881.50	\$121.98	\$53.34	\$0.00	\$563.70	\$1,620.52
HAUL / Hauling	110.0	\$2,393.90	\$1,036.20	\$2,329.96	\$0.00	\$1,586.20	\$7,346.26
HYDR / Hydroseeding	10.0	\$210.60	\$42.88	\$112.17	\$0.00	\$132.30	\$497.95
ONJV / Onsite Job Visit	6.0	\$161.46	\$10.86	\$13.84	\$0.00	\$95.01	\$281.17
RSDCL / Roadside Ditch - Cleanout	200.0	\$4,511.20	\$759.97	\$186.76	\$0.00	\$2,673.50	\$8,131.43
SG / Shoot Grade	26.0	\$664.93	\$43.38	\$23.69	\$0.00	\$439.35	\$1,171.35
STAGING / Staging Materials/Equipment	44.0	\$958.58	\$130.88	\$66.29	\$0.00	\$611.18	\$1,766.93
WDR / Wash down road	6.0	\$126.36	\$32.00	\$22.08	\$0.00	\$79.38	\$259.82
<b>2017-507 / H.E. McCracken Circle Sub Total</b>	<b>563.0</b>	<b>\$12,565.76</b>	<b>\$2,577.76</b>	<b>\$3,022.57</b>	<b>\$0.00</b>	<b>\$7,847.63</b>	<b>\$26,013.72</b>
<b>Grand Total</b>	<b>563.0</b>	<b>\$12,565.76</b>	<b>\$2,577.76</b>	<b>\$3,022.57</b>	<b>\$0.00</b>	<b>\$7,847.63</b>	<b>\$26,013.72</b>

Before



During



After



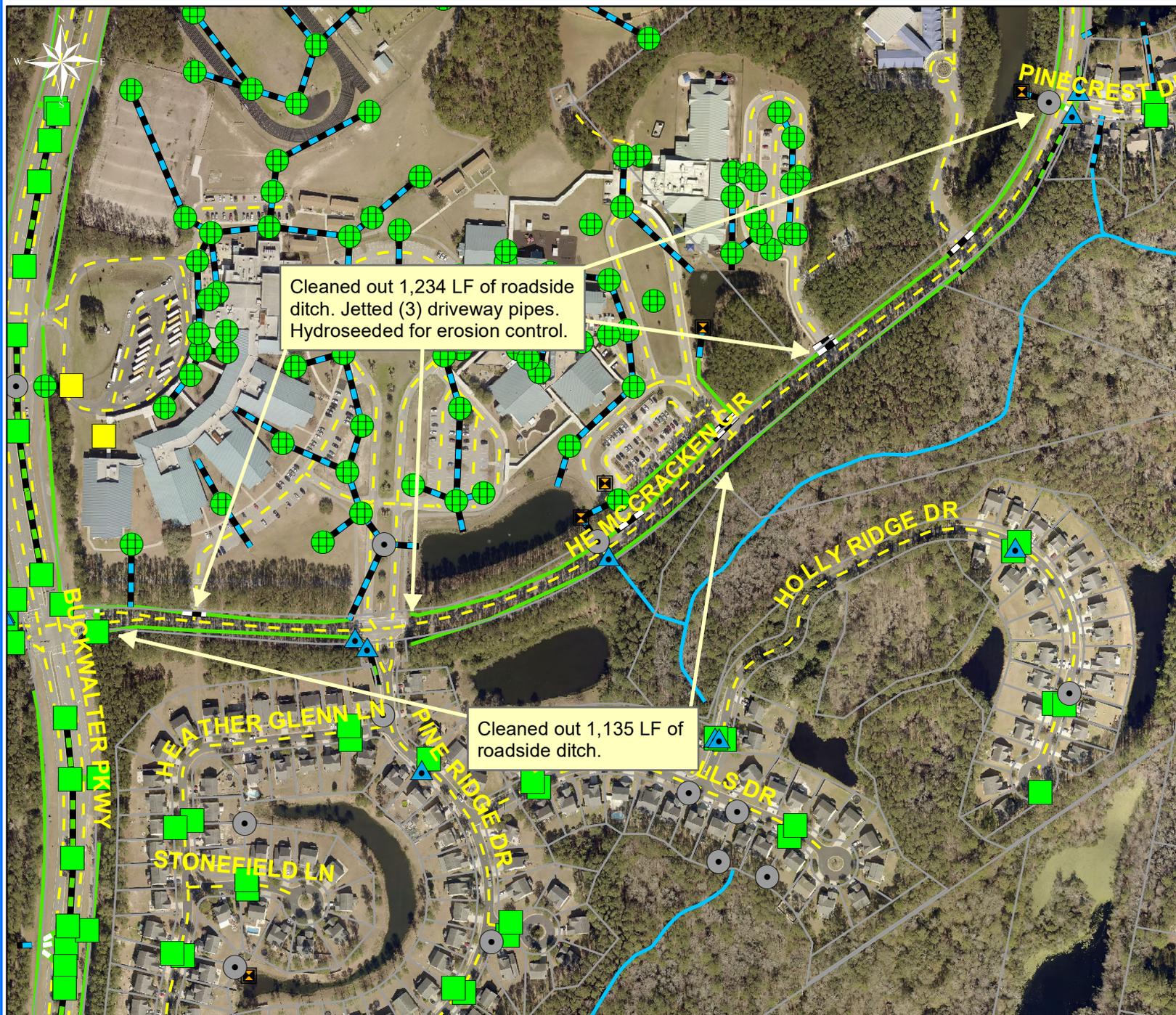
Project: H. E. McCracken Circle Map #1

Activity: Routine/ Preventive Maintenance

Project #: 2017-507

Township/SW Dist: Bluffton/4

Completed: June 2017



Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe

0 80 160 320 480 640 Feet

1 inch = 330 feet

Prepared By: BC Stormwater Management Utility

Date Print:08/07/17

File:C:\project summaries map\HE McCracken Circle Map #1\_2017-507

Project: H. E. McCracken Circle Map #2

Activity: Routine/ Preventive Maintenance

Project #: 2017-507

Township/SW Dist: Bluffton/4

Completed: June 2017



Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 330 feet

Project: H. E. McCracken Circle Map #3

Activity: Routine/ Preventive Maintenance

Project #: 2017-507

Township/SW Dist: Bluffton/4

Completed: June 2017



**Legend**

**Drainage Type**

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



1 inch = 170 feet

Prepared By: BC Stormwater Management Utility

Date Print:08/07/17

File:C:\project summaries map\HE McCracken Circle Map #3\_2017-507



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

**Project Summary:** Leo Green Road Channel #1

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 3/21/17 - 3/28/17

Project improved 1,620 L.F. of drainage system. Grubbed and cleared 100 L.F. of workshelf. Bush hogged and cleaned out 1,620 L.F. of channel. Jetted (1) access pipe and (1) crossline pipe.

<b>2017-544 / Leo Green Rd Ch #1</b>	<b>Labor Hours</b>	<b>Labor Cost</b>	<b>Equipment Cost</b>	<b>Material Cost</b>	<b>Contracto Cost</b>	<b>Indirect Labor</b>	<b>Total Cost</b>
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CBH / Channel- bushhogged	10.0	\$210.68	\$137.72	\$37.34	\$0.00	\$133.15	\$518.88
CCO / Channel - cleaned out	84.0	\$1,883.00	\$463.99	\$77.61	\$0.00	\$1,202.04	\$3,626.64
CLPJT / Crossline Pipe - Jetted	8.0	\$178.24	\$34.72	\$52.12	\$0.00	\$114.72	\$379.80
HAUL / Hauling	41.0	\$873.57	\$386.22	\$278.59	\$0.00	\$323.27	\$1,861.65
PL / Project Layout	40.0	\$883.10	\$36.00	\$12.96	\$0.00	\$561.60	\$1,493.66
RMTRW / Remove trees - Workshelf	30.0	\$672.50	\$236.41	\$49.92	\$0.00	\$429.30	\$1,388.13
UTLOC / Utility locates	0.5	\$12.35	\$0.00	\$0.00	\$0.00	\$6.62	\$18.97
WSDR / Workshelf - Dressed	25.0	\$540.85	\$132.52	\$230.68	\$0.00	\$336.75	\$1,240.80
WSGRB / Workshelf - Grubbed	20.0	\$461.90	\$150.52	\$28.80	\$0.00	\$307.20	\$948.42
<b>2017-544 / Leo Green Road Ch #1 Sub Total</b>	<b>259.0</b>	<b>\$5,727.93</b>	<b>\$1,578.10</b>	<b>\$768.02</b>	<b>\$0.00</b>	<b>\$3,421.26</b>	<b>\$11,495.31</b>
<b>Grand Total</b>	<b>259.0</b>	<b>\$5,727.93</b>	<b>\$1,578.10</b>	<b>\$768.02</b>	<b>\$0.00</b>	<b>\$3,421.26</b>	<b>\$11,495.31</b>

Before

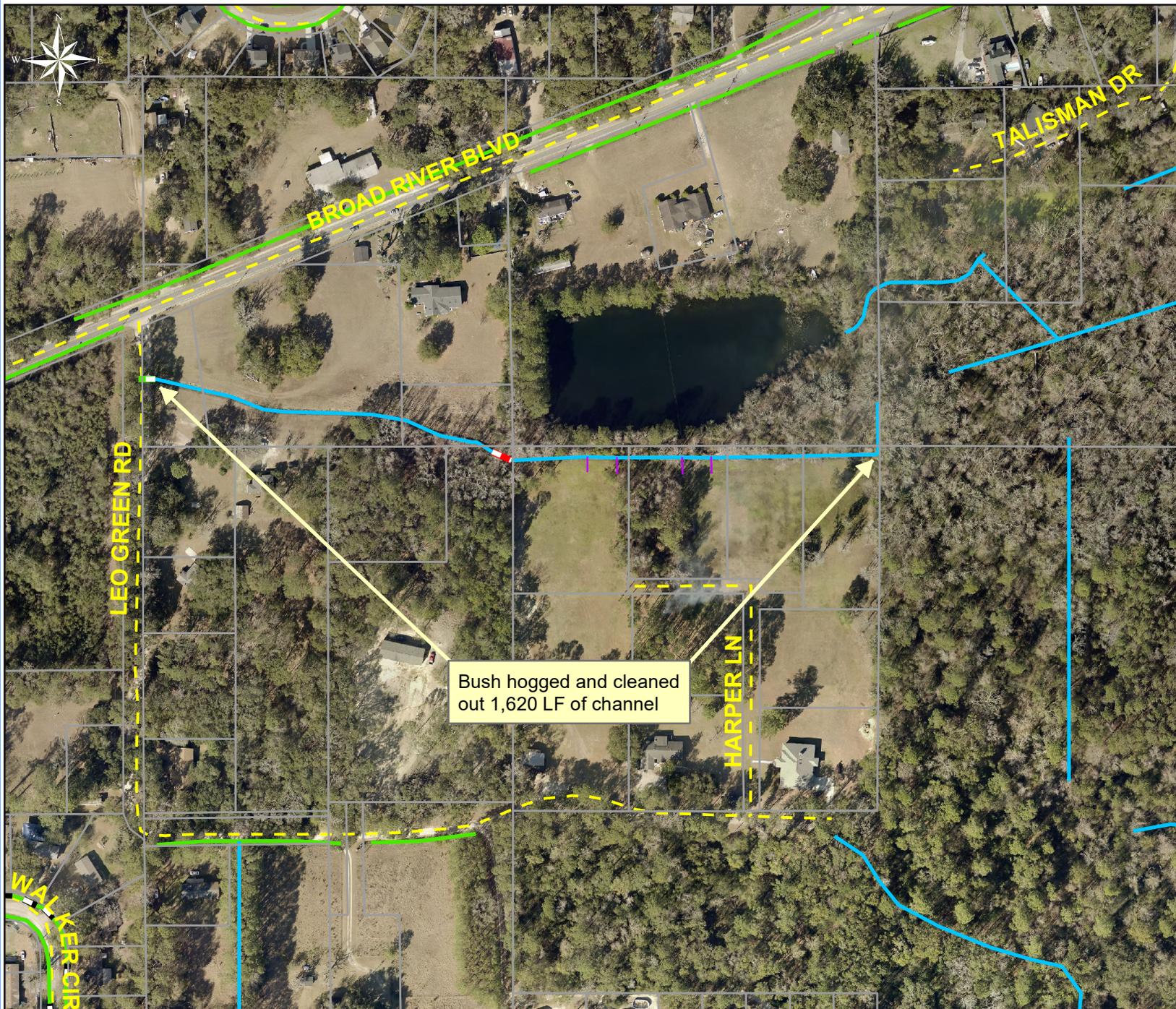


During



After





Project: Leo Green Road Channel #1 Map #1

Activity: Routine/ Preventive Maintenance

Project #: 2017-544

Township/SW Dist: Port Royal Island/6

Completed: April 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe

Bush hogged and cleaned out 1,620 LF of channel



1 inch = 250 feet



Project: Leo Green Road Channel #1  
Map #2

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-544

Township/SW Dist:  
Port Royal Island/6

Completed:  
April 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 250 feet



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

**Project Summary:** Roosevelt Avenue

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

Repaired washouts. Installed stammat, rip rap and handseeded for erosion control.

**Duration:** 1/9/17 - 5/15/17

<b>2017-325A / Roosevelt Avenue</b>	<b>Labor Hours</b>	<b>Labor Cost</b>	<b>Equipment Cost</b>	<b>Material Cost</b>	<b>Contracto Cost</b>	<b>Indirect Labor</b>	<b>Total Cost</b>
APREP / Asphalt Preparation	12.5	\$266.35	\$19.30	\$13.27	\$0.00	\$165.83	\$464.75
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
HAUL / Hauling	54.0	\$1,226.94	\$478.20	\$1,115.51	\$0.00	\$798.86	\$3,619.51
RPWO / Repaired Washout	110.0	\$2,456.90	\$428.33	\$625.22	\$0.00	\$1,302.30	\$4,812.75
SC / Sediment Control	40.0	\$871.10	\$135.08	\$100.36	\$0.00	\$429.30	\$1,535.84
<b>2017-325A / Roosevelt Avenue</b>	<b>217.0</b>	<b>\$4,833.04</b>	<b>\$1,060.91</b>	<b>\$1,854.36</b>	<b>\$0.00</b>	<b>\$2,702.90</b>	<b>\$10,451.20</b>
<b>Sub Total</b>							
<b>Grand Total</b>	<b>217.0</b>	<b>\$4,833.04</b>	<b>\$1,060.91</b>	<b>\$1,854.36</b>	<b>\$0.00</b>	<b>\$2,702.90</b>	<b>\$10,451.20</b>

(Pictures Not Available)



Project: Roosevelt Avenue

Activity: Routine/ Preventive Maintenance

Project #: 2017-325A

Township/SW Dist: Port Royal Island/6

Completed: May 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 83 feet



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

**Project Summary:** Ihly Farms Road Channel #1

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 3/21/17 - 3/28/17

Project improved 4,645 L.F. of drainage system. Bush hogged 1,182 L.F. channel and 2,480 L.F. of lateral channel. Cleaned out 723 L.F. of roadside ditch and 430 L.F. of channel. Jetted (4) crossline pipes.

<b>2017-542 / Ihly Farms Road Ch #1</b>	<b>Labor Hours</b>	<b>Labor Cost</b>	<b>Equipment Cost</b>	<b>Material Cost</b>	<b>Contracto Cost</b>	<b>Indirect Labor</b>	<b>Total Cost</b>
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CBH / Channel- bushhogged	40.0	\$883.10	\$95.76	\$11.40	\$0.00	\$561.60	\$1,551.86
HAUL / Hauling	25.0	\$556.75	\$235.50	\$473.83	\$0.00	\$360.50	\$1,626.58
RSDCL / Roadside Ditch - Cleanout	15.0	\$342.25	\$97.07	\$20.90	\$0.00	\$219.75	\$679.97
WSBH / Workshelf - Bush Hogged	30.0	\$672.50	\$168.92	\$104.50	\$0.00	\$429.30	\$1,375.22
WSDR / Workshelf - Dressed	30.0	\$672.50	\$121.89	\$7.16	\$0.00	\$439.50	\$1,241.05
WVEHE / Washing Vehicles/Equipment	38.5	\$851.51	\$36.00	\$15.20	\$0.00	\$543.29	\$1,446.00
<b>2017-542 / Ihly Farms Road Ch #1 Sub Total</b>	<b>179.0</b>	<b>\$3,990.36</b>	<b>\$755.14</b>	<b>\$632.99</b>	<b>\$0.00</b>	<b>\$2,560.55</b>	<b>\$7,939.03</b>
<b>Grand Total</b>	<b>179.0</b>	<b>\$3,990.36</b>	<b>\$755.14</b>	<b>\$632.99</b>	<b>\$0.00</b>	<b>\$2,560.55</b>	<b>\$7,939.03</b>

(Pictures Not Available)

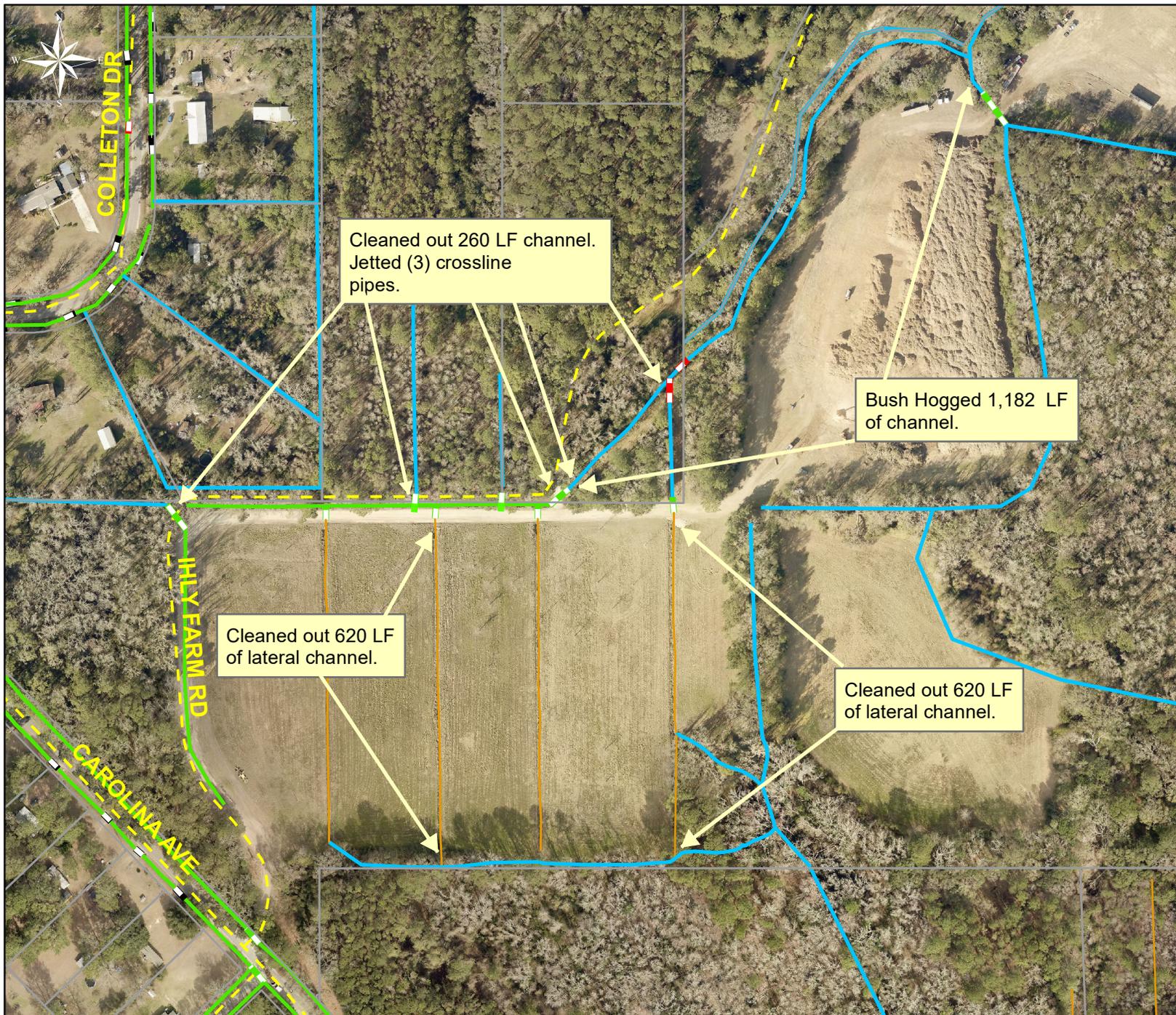
Project: Ihly Farm  
Channel #1  
Map #1

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-542

Township/SW Dist:  
Port Royal Island/6

Completed:  
March 2017



Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 250 feet

Project: Ihly Farm  
Channel #1  
Map #2

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-542

Township/SW Dist:  
Port Royal Island/6

Completed:  
March 2017



Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 170 feet



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

**Project Summary:** St Helena Island Valley Drains

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 3/21/17 - 4/5/17

Project improved 19,734 L.F. of drainage system. Cleaned out 19,734 L.F. of valley drains. This project consisted of the following areas: Vineyard Point Road (6,578 L.F.), Tombee Road (7,084 L.F.), Luther Warren Drive (1,570 L.F.), The Avenue (1,144 L.F.), White Sands Circle (1,174 L.F.) and Levant Byas Road (2,184 L.F.)

<b>2017-316 / St Helena Island Valley Drains</b>	<b>Labor Hours</b>	<b>Labor Cost</b>	<b>Equipment Cost</b>	<b>Material Cost</b>	<b>Contracto Cost</b>	<b>Indirect Labor</b>	<b>Total Cost</b>
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
COVD / Cleaned Out Valley Drains	111.0	\$2,508.95	\$525.92	\$582.36	\$0.00	\$1,540.10	\$5,157.33
HAUL / Hauling	50.0	\$999.70	\$471.00	\$129.22	\$0.00	\$144.20	\$1,744.12
<b>2017-316 / St Helena Island Valley Drains Sub Total</b>	<b>161.5</b>	<b>\$3,520.40</b>	<b>\$996.92</b>	<b>\$711.58</b>	<b>\$0.00</b>	<b>\$1,690.92</b>	<b>\$6,919.81</b>
<b>Grand Total</b>	<b>161.5</b>	<b>\$3,520.40</b>	<b>\$996.92</b>	<b>\$711.58</b>	<b>\$0.00</b>	<b>\$1,690.92</b>	<b>\$6,919.81</b>

(Pictures Not Available)



Project: St. Helena Island Valley Drains Map#1

Activity: Routine/ Preventive Maintenance

Project #: 2017-316

Township/SW Dist: St. Helena Island/8

Completed: April 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 250 feet

Project: St. Helena  
Island Valley  
Drains  
Map#2

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-316

Township/SW Dist:  
St. Helena Island/8

Completed:  
April 2017



Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe

0 100 200 400 600 800  
Feet

1 inch = 420 feet

Prepared By: BC Stormwater Management Utility

Date Print: 10/09/19

File: C:\project summaries map\St. Helena Island Valley Drains Map#2\_2017-316

Project: St. Helena  
Island Valley  
Drains  
Map#3

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-316

Township/SW Dist:  
St. Helena Island/8

Completed:  
April 2017



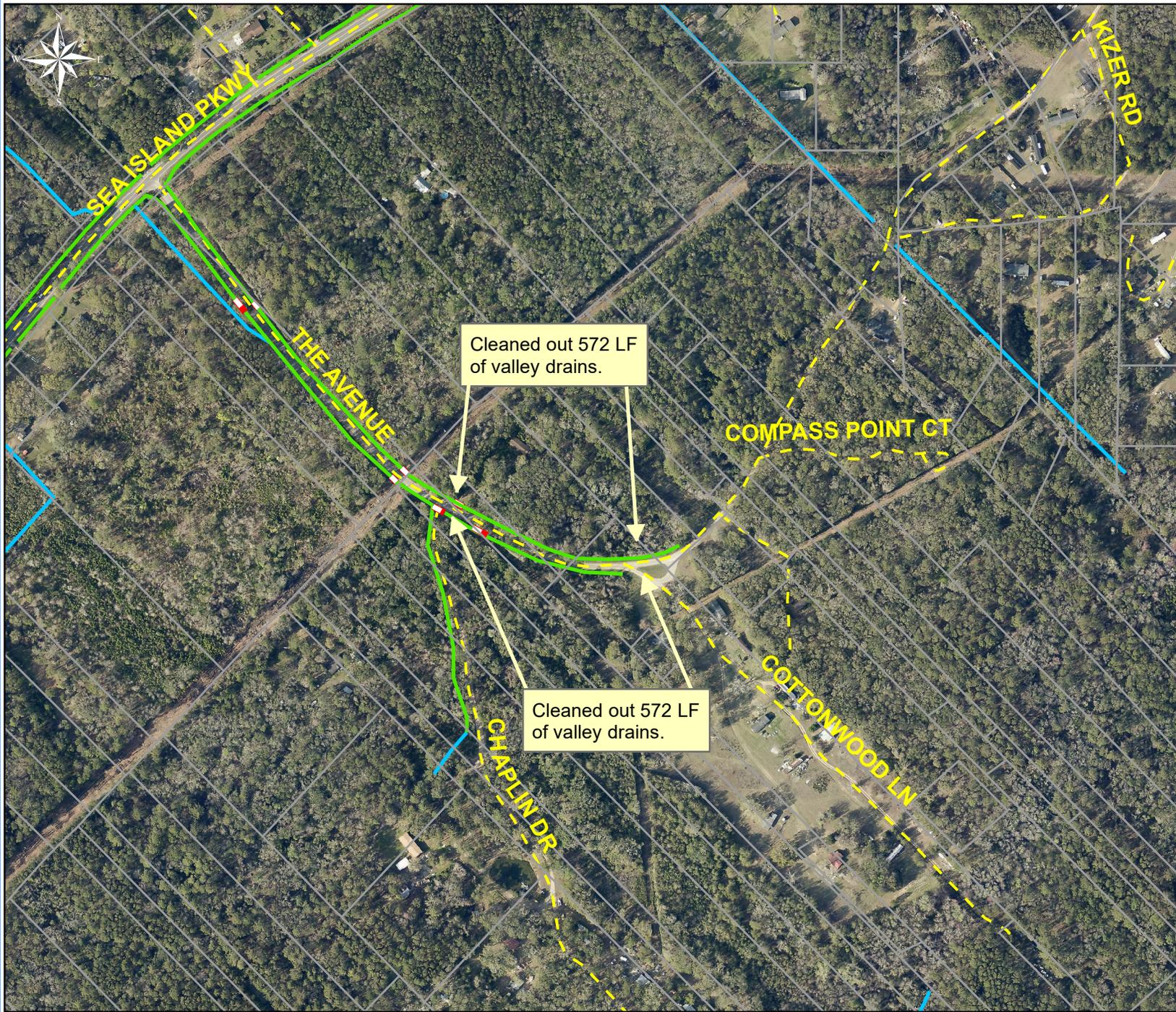
Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 280 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 10/09/19

File: C:\project summaries map\St. Helena Island Valley Drains Map#3\_2017-316



Project: St. Helena  
Island Valley  
Drains  
Map#4

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-316

Township/SW Dist:  
St. Helena Island/8

Completed:  
April 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 420 feet



Project: St. Helena  
Island Valley  
Drains  
Map#5

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-316

Township/SW Dist:  
St. Helena Island/8

Completed:  
April 2017

**Legend**

**Drainage Type**

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

0 40 80 160 240 320  
Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 10/09/19

File: C:\project summaries map\St. Helena Island Valley Drains Map#5\_2017-316

Project: St. Helena  
Island Valley  
Drains  
Map#6

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-316

Township/SW Dist:  
St. Helena Island/8

Completed:  
April 2017



### Legend

#### Drainage Type

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

0 60 120 240 360 480  
Feet

1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print: 10/09/19

File: C:\project summaries map\St. Helena Island Valley Drains Map#6\_2017-316



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

**Project Summary:** Ladys Island Valley Drains

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 2/1/17 - 4/18/17

Project improved 7,346 L.F. drainage system. This project consisted of the following areas: Ethel Grant Lane (752 L.F.), Fairfield Road (4,788 L.F.) and Rue Du Bois (1,806 L.F.)

<b>2017-312A / Ladys Island Valley Drains</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	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
COVD / Cleaned Out Valley Drains	138.0	\$2,988.91	\$418.36	\$242.88	\$0.00	\$1,684.35	\$5,334.50
HAUL / Hauling	28.0	\$584.69	\$249.46	\$96.00	\$0.00	\$216.30	\$1,146.45
<b>2017-312A / Ladys Island Valley Drains Sub Total</b>	<b>166.5</b>	<b>\$3,585.35</b>	<b>\$667.82</b>	<b>\$338.88</b>	<b>\$0.00</b>	<b>\$1,907.26</b>	<b>\$6,499.31</b>
<b>Grand Total</b>	<b>166.5</b>	<b>\$3,585.35</b>	<b>\$667.82</b>	<b>\$338.88</b>	<b>\$0.00</b>	<b>\$1,907.26</b>	<b>\$6,499.31</b>

Before



During



After





Project: Ladys Island Valley Drains - Ethel Grant Lane Map #1

Activity: Routine/ Preventive Maintenance

Project #: 2017-312A

Township/SW Dist: Ladys Island/7

Completed: April 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 83 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 10/05/17

File: C:\project summaries map\Ladys Island Valley Drains- Ethel Grant Lane Map#1\_2017-312A

Project: Ladys Island Valley Drains - Fairfield Road Map #2

Activity: Routine/ Preventive Maintenance

Project #: 2017-312A

Township/SW Dist: Ladys Island/7

Completed: April 2017



Cleaned out 2,394 LF of valley drains.

Cleaned out 2,394 LF of valley drains.

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 500 feet

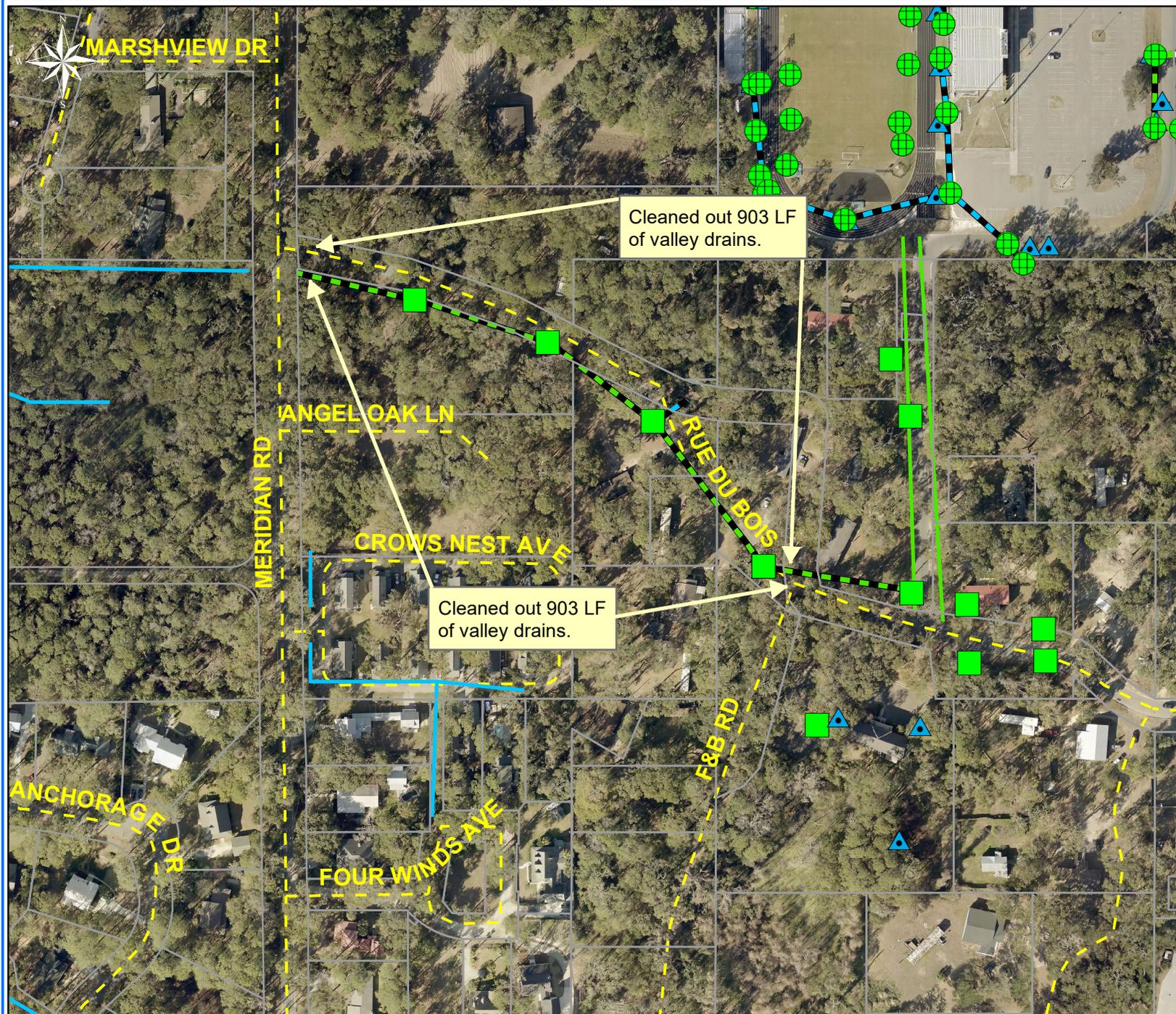
Project: Ladys Island Valley Drains - Rue Du Bois Map #3

Activity: Routine/ Preventive Maintenance

Project #: 2017-312A

Township/SW Dist: Ladys Island/7

Completed: April 2017



### Legend

#### Drainage Type

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



1 inch = 210 feet

Prepared By: BC Stormwater Management Utility

Date Print: 10/05/17

File: C:\project summaries map\Ladys Island Valley Drains- Rue Du Bois Map3\_2017-312A



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

**Project Summary:** Forest Field Subdivision

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 4/18/17 - 5/15/17

Project improved 425 L.F. of drainage system. Reconstructed 425 L.F. of workshel. Repaired sinkhole.

<b>2017-567 / Forest Field Subdivision</b>	<b>Labor Hours</b>	<b>Labor Cost</b>	<b>Equipment Cost</b>	<b>Material Cost</b>	<b>Contracto Cost</b>	<b>Indirect Labor</b>	<b>Total Cost</b>
APREP / Asphalt Preparation	17.5	\$377.70	\$70.19	\$394.76	\$0.00	\$237.93	\$1,080.58
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
HAUL / Hauling	40.5	\$901.94	\$381.51	\$315.34	\$0.00	\$584.01	\$2,182.80
HYDR / Hydroseeding	20.0	\$510.30	\$48.44	\$164.18	\$0.00	\$299.10	\$1,022.02
RPWO / Repaired Washout	40.0	\$1,020.60	\$344.47	\$41.63	\$0.00	\$598.20	\$2,004.90
<b>2017-567 / Forest Field Subdivision</b>	<b>118.5</b>	<b>\$2,822.28</b>	<b>\$844.61</b>	<b>\$915.91</b>	<b>\$0.00</b>	<b>\$1,725.85</b>	<b>\$6,308.65</b>
<b>Sub Total</b>							
<b>Grand Total</b>	<b>118.5</b>	<b>\$2,822.28</b>	<b>\$844.61</b>	<b>\$915.91</b>	<b>\$0.00</b>	<b>\$1,725.85</b>	<b>\$6,308.65</b>

Before



During





Project: Forest Field Road Subdivision

Activity: Routine/ Preventive Maintenance

Project #: 2017-567

Township/SW Dist: Port Royal Island/6

Completed: May 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 210 feet

Prepared By: BC Stormwater Management Utility  
 Date Print: 08/07/17  
 File: C:\project summaries map\Forest Field Road\_2017-567



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

**Project Summary:** Port Royal Island Valley Drains

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 12/29/16 - 4/19/17

Project improved 25,930 L.F. of drainage system. This project consisted of the following areas: Harold Drive (2,952 L.F.), Blackburn Pierce Drive (1,576 L.F.), Murray Drive (7,884 L.F.), Smalls Hill Road (1,320 L.F.), Joe Allen Drive (3,084 L.F.), Jonesfield Place/Road (5,530 L.F.) and Roseida Road Extension (3,584 L.F.)

<b>2017-314A / Port Royal Island Valley Drains</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	1.0	\$23.49	\$0.00	\$0.00	\$0.00	\$13.23	\$36.72
COVD / Cleaned Out Valley Drains	80.0	\$1,779.65	\$455.46	\$101.76	\$0.00	\$1,085.25	\$3,422.12
HAUL / Hauling	28.0	\$672.16	\$205.56	\$46.08	\$0.00	\$444.76	\$1,368.56
<b>2017-314A / Port Royal Island Valley Drains Sub Total</b>	<b>109.0</b>	<b>\$2,475.30</b>	<b>\$661.02</b>	<b>\$147.84</b>	<b>\$0.00</b>	<b>\$1,543.24</b>	<b>\$4,827.40</b>
<b>Grand Total</b>	<b>109.0</b>	<b>\$2,475.30</b>	<b>\$661.02</b>	<b>\$147.84</b>	<b>\$0.00</b>	<b>\$1,543.24</b>	<b>\$4,827.40</b>

Before



During



After



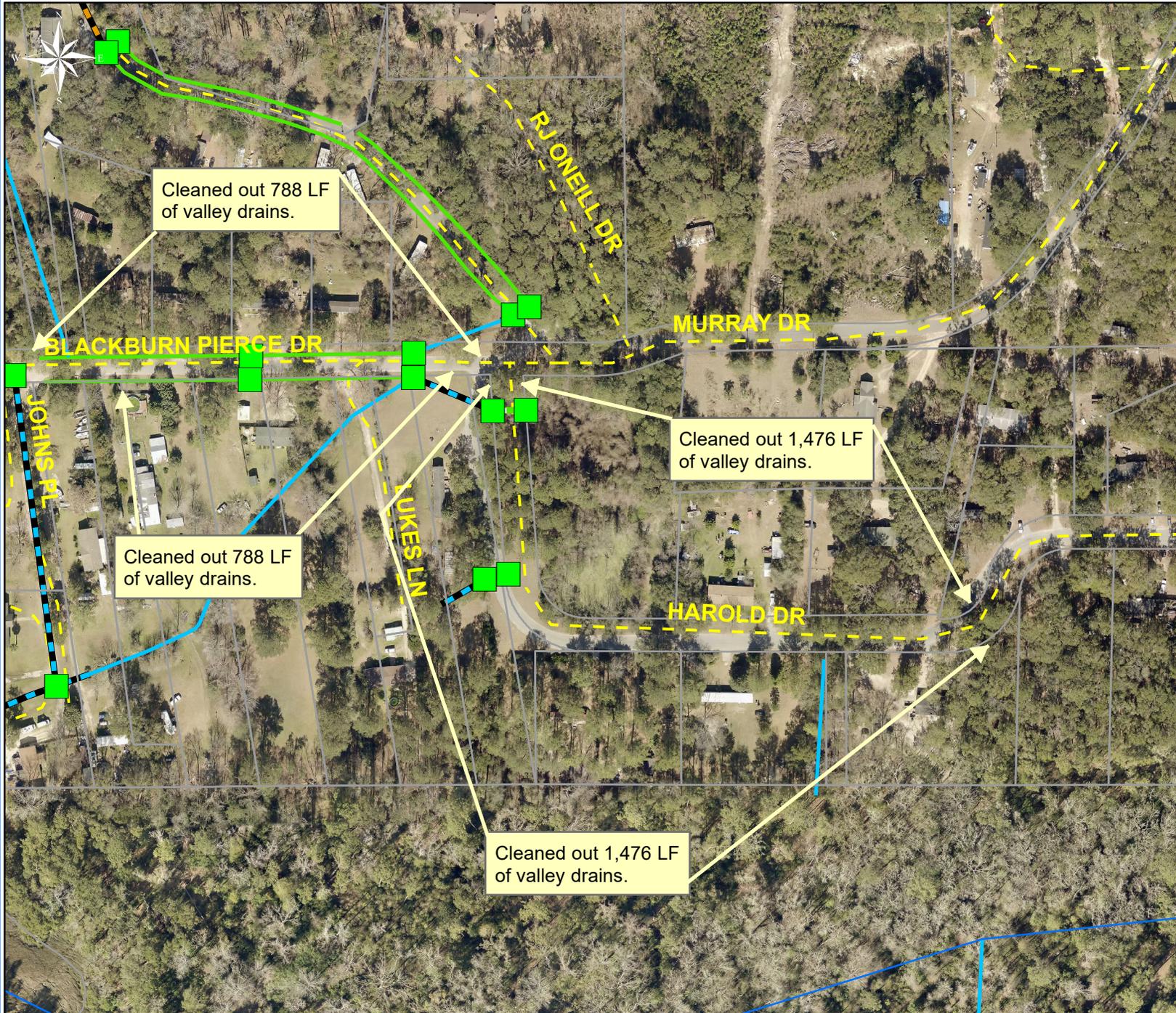
Project: Port Royal  
Island Valley  
Drains Map#1

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-314A

Township/SW Dist:  
Port Royal Island/6  
&9

Completed:  
April 2017



**Legend**

**Drainage Type**

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



1 inch = 210 feet

Prepared By: BC Stormwater Management Utility

Date Print: 10/09/17

File: C:\project summaries map\Port Royal Island Valley Drains Map#1\_2017-314A

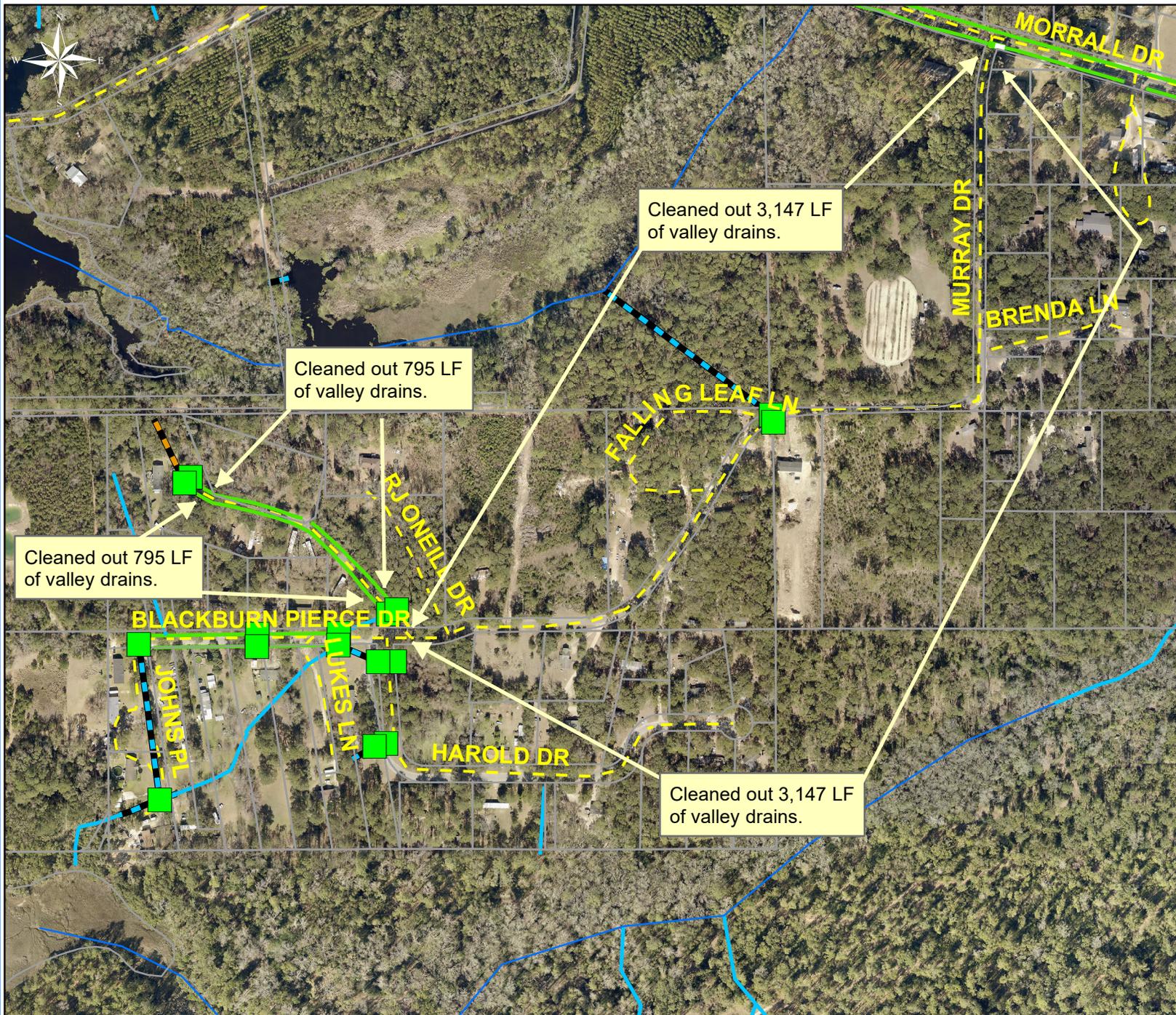
Project: Port Royal  
Island Valley  
Drains Map#2

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-314A

Township/SW Dist:  
Port Royal Island/6  
&9

Completed:  
April 2017



### Legend

#### Drainage Type

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

0 100 200 400 600 800  
Feet

1 inch = 420 feet

Prepared By: BC Stormwater Management Utility

Date Print: 10/09/17

File: C:\project summaries map\Port Royal Island Valley Drains Map#2\_2017-314A

Project: Port Royal  
Island Valley  
Drains Map#3

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-314A

Township/SW Dist:  
Port Royal Island/6  
&9

Completed:  
April 2017



**Legend**

**Drainage Type**

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



**1 inch = 210 feet**

Prepared By: BC Stormwater Management Utility

Date Print: 10/09/17

File: C:\project summaries map\Port Royal Island Valley Drains Map#3\_2017-314A



Project: Port Royal Island Valley Drains Map#4

Activity: Routine/ Preventive Maintenance

Project #: 2017-314A

Township/SW Dist: Port Royal Island/6 & 9

Completed: April 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 330 feet

Prepared By: BC Stormwater Management Utility  
 Date Print: 10/09/17  
 File: C:\project summaries map\Port Royal Island Valley Drains Map#4\_ 2017-314A

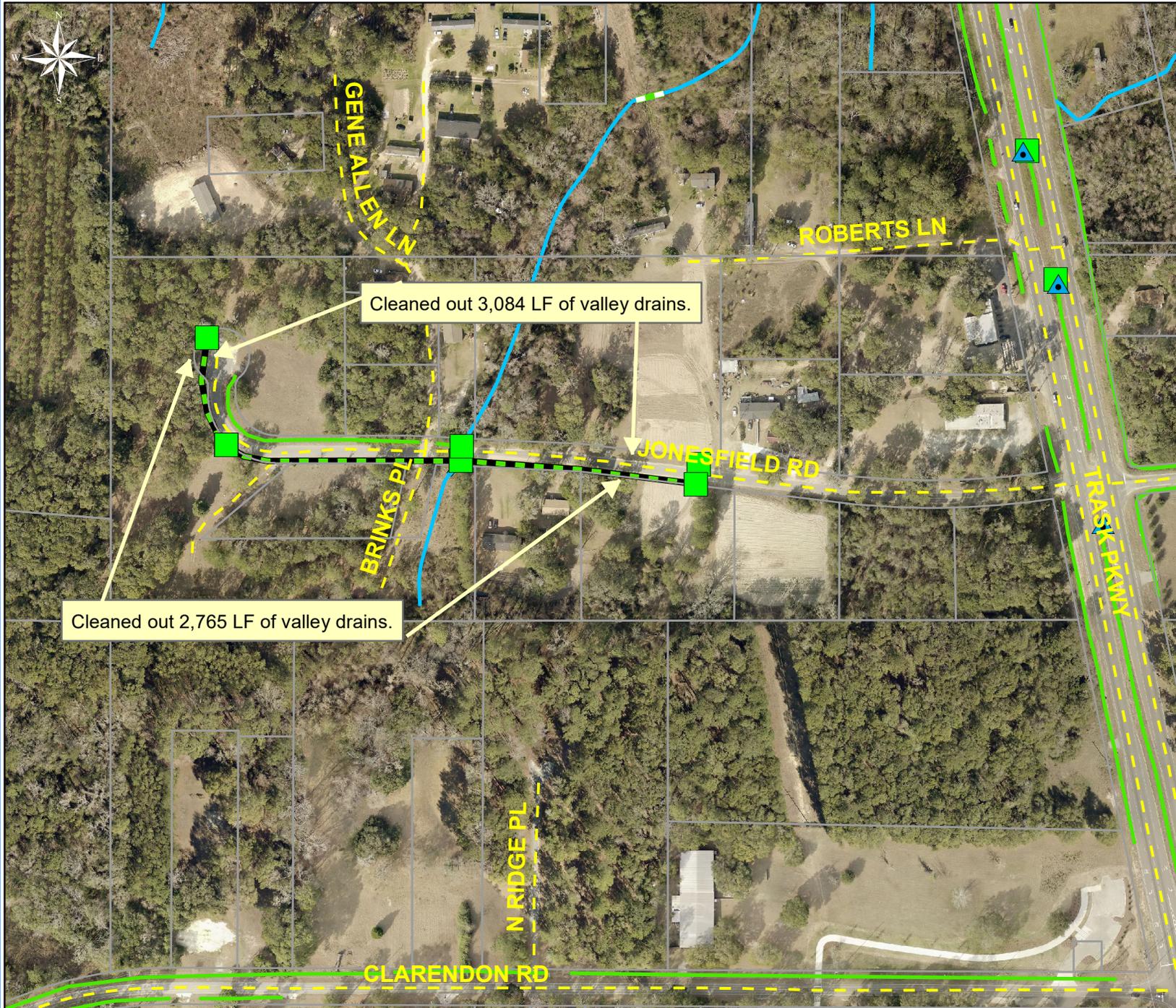
Project: Port Royal  
Island Valley  
Drains Map#5

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-314A

Township/SW Dist:  
Port Royal Island/6  
&9

Completed:  
April 2017



Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print: 10/09/17

File: C:\project summaries map\Port Royal Island Valley Drains Map#5\_2017-314A

Project: Port Royal  
Island Valley  
Drains Map#6

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-314A

Township/SW Dist:  
Port Royal Island/6  
&9

Completed:  
April 2017

### Legend

#### Drainage Type

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



1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print: 10/09/17

File: C:\project summaries map\Port Royal Island Valley Drains Map#6\_2017-314A



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

**Project Summary:** St Helena Island Vacuum Truck - Levant Byas Road, Luther Warren Drive, Almond Drive and Sea Pines Road

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

Project improved 116 L.F. of drainage system. Cleaned out (8) catch basins. Jetted (12) driveway pipes, (5) crossline pipes and 116 L.F. of channel pipe.

**Duration:** 3/13/17 - 5/4/17

<b>2017-309A / St Helena Island Vac Truck</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	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CBCO / Catch basin - clean out	26.5	\$586.79	\$108.50	\$71.07	\$0.00	\$376.82	\$1,143.18
CLPJT / Crossline Pipe - Jetted	19.4	\$432.23	\$84.20	\$74.05	\$0.00	\$278.20	\$868.67
CPJ / Channel Pipe - Jetted	22.0	\$490.16	\$95.48	\$87.54	\$0.00	\$315.48	\$988.65
DPJT / Driveway Pipe - Jetted	32.0	\$712.96	\$138.88	\$70.60	\$0.00	\$458.88	\$1,381.32
<b>2017-309A / St Helena Island Vac Truck</b>	<b>100.4</b>	<b>\$2,233.89</b>	<b>\$427.06</b>	<b>\$303.26</b>	<b>\$0.00</b>	<b>\$1,435.99</b>	<b>\$4,400.18</b>
<b>Sub Total</b>							
 <b>Grand Total</b>	 <b>100.4</b>	 <b>\$2,233.89</b>	 <b>\$427.06</b>	 <b>\$303.26</b>	 <b>\$0.00</b>	 <b>\$1,435.99</b>	 <b>\$4,400.18</b>

Before

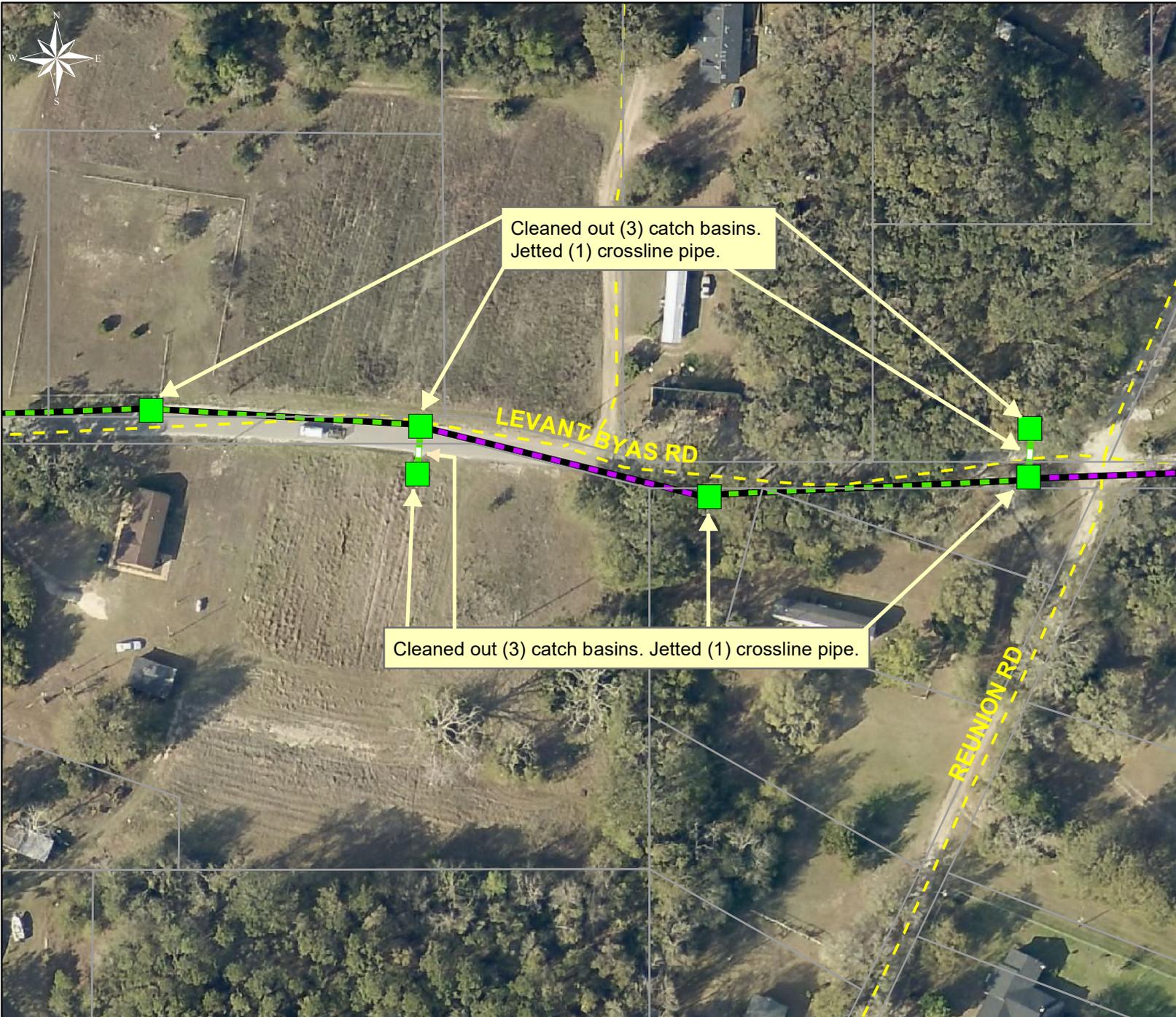


During



After





Project: St. Helena Island Vacuum Truck- Levant Byas Map#1

Activity: Routine/ Preventive Maintenance

Project #: 2017-309A

Township/SW Dist: St. Helena Island/8

Completed: May 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 100 feet

Prepared By: BC Stormwater Management Utility  
Date Print: 10/05/17

File: C:\project summaries map\St. Helena Island Vac Truck Levant Byas Map #1\_2017-309A



Cleaned out (2) catch basins.  
 Jetted (1) crossline pipe and  
 8 LF of channel pipe.

Project: St. Helena  
 Island Vacuum  
 Truck- Luther  
 Warren Drive  
 Map#2

Activity: Routine/  
 Preventive  
 Maintenance

Project #:  
 2017-309A

Township/SW Dist:  
 St. Helena Island/8

Completed:  
 May 2017

Legend	
<b>Drainage Type</b>	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 67 feet

Prepared By: BC Stormwater Management Utility  
 Date Print: 10/05/17

File: C:\project summaries map\St. Helena Island Vac Truck Luther Warren Drive Map #2 2017-309A



Project: St. Helena  
Island Vacuum  
Truck- Almond  
Drive  
Map#3

Activity: Routine/  
Preventive  
Maintenance

Project #:  
2017-309A

Township/SW Dist:  
St. Helena Island/8

Completed:  
May 2017

**Legend**

**Drainage Type**

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

Jetted 108 LF of channel pipe.



1 inch = 140 feet



Project: St. Helena Island Vacuum Truck- Sea Pines Drive Map#4

Activity: Routine/ Preventive Maintenance

Project #: 2017-309A

Township/SW Dist: St. Helena Island/8

Completed: May 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe

0 100 200 400 600 800 Feet  
 1 inch = 420 feet

Prepared By: BC Stormwater Management Utility  
 Date Print: 10/05/17  
 File: C:\project summaries map\St. Helena Island Vac Truck Sea Pines Drive Map #4\_2017-309A



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

**Project Summary:** Port Royal Island Repaired Washouts - St Paul Church Road and Josephine Drive

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**  
Repaired washouts.

**Duration:** 1/5/17 - 6/29/17

<b>2017-320A / Port Royal Island Repaired Washouts</b>	<b>Labor Hours</b>	<b>Labor Cost</b>	<b>Equipment Cost</b>	<b>Material Cost</b>	<b>Contracto Cost</b>	<b>Indirect Labor</b>	<b>Total Cost</b>
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
HAUL / Hauling	20.0	\$460.08	\$141.30	\$495.14	\$0.00	\$300.70	\$1,397.22
RPWO / Repaired Washout	36.0	\$811.90	\$93.26	\$60.61	\$0.00	\$440.70	\$1,406.47
<b>2017-320A / Port Royal Island Repaired Washouts Sub Total</b>	<b>56.5</b>	<b>\$1,283.73</b>	<b>\$234.56</b>	<b>\$555.76</b>	<b>\$0.00</b>	<b>\$748.01</b>	<b>\$2,822.06</b>
<b>Grand Total</b>	<b>56.5</b>	<b>\$1,283.73</b>	<b>\$234.56</b>	<b>\$555.76</b>	<b>\$0.00</b>	<b>\$748.01</b>	<b>\$2,822.06</b>

Before

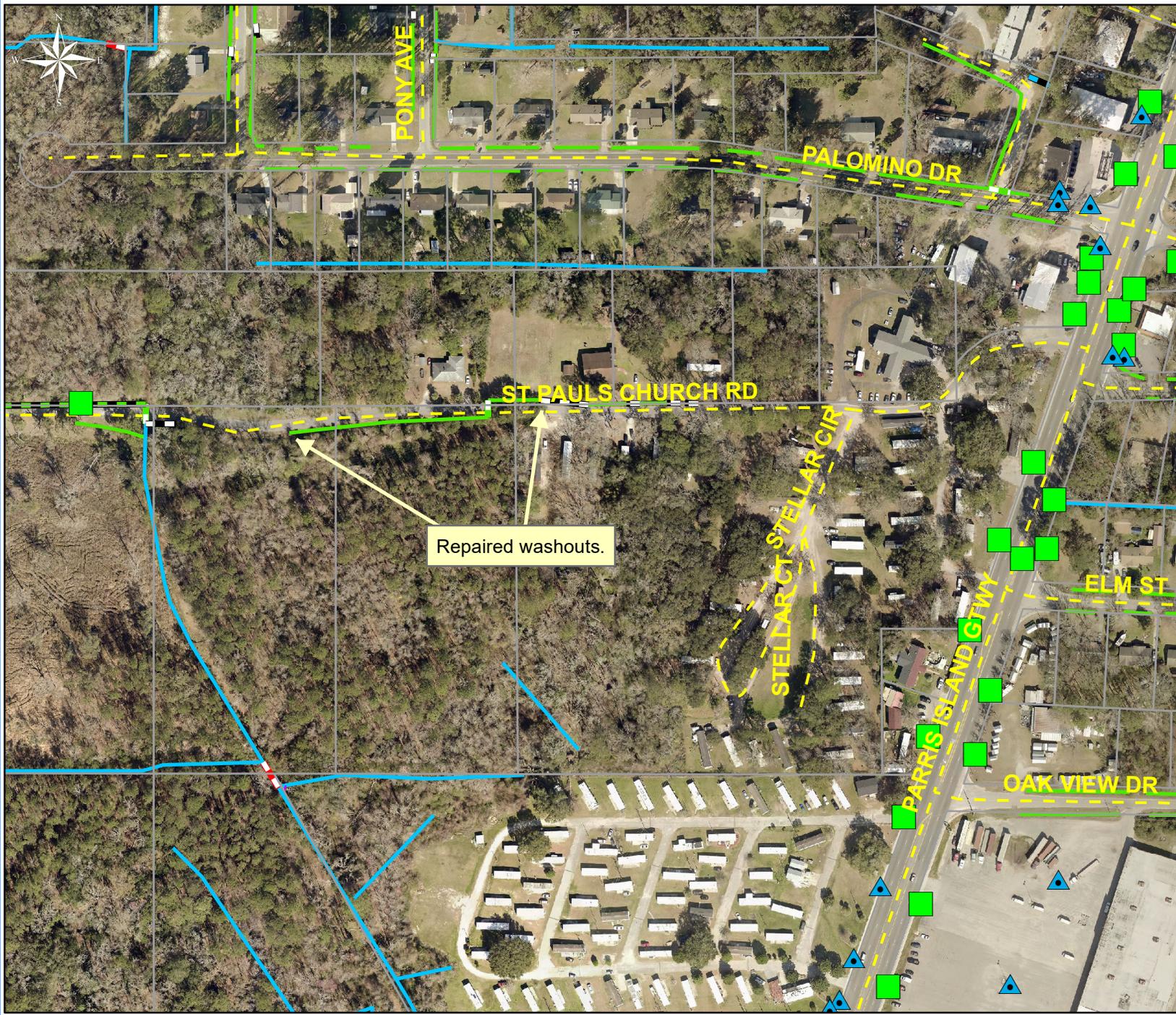


During



After





Project: PRI-  
 Repaired Washouts  
 - St. Pauls Church  
 Road Map #1

Activity: Routine/  
 Preventive  
 Maintenance

Project #:  
 2017-320A

Township/SW Dist:  
 Port Royal Island/6

Completed:  
 June 2017

Legend	
<b>Drainage Type</b>	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 250 feet

Prepared By: BC Stormwater Management Utility  
 Date Print: 08/01/17

File: C:\project summaries map\PRI Repaired Washouts St. Pauls Church Road Map #1 2017-320A



Project: PRI -  
 Repaired Washouts  
 - Josephine  
 Drive Map #2

Activity: Routine/  
 Preventive  
 Maintenance

Project #:  
 2017-320A

Township/SW Dist:  
 Port Royal Island/6

Completed:  
 June 2017

Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print:08/01/17

File:C:\project summaries map/PRI Repaired Washouts Josephine Drive Map#2\_2017-320A



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

**Project Summary:** St. Pauls Church Road Channel #1

**Activity:** Routine/Preventive Maintenance

**Narrative Description of Project:**

**Duration:** 4/17/17

Project improved 1,844 L.F. drainage system. Cleaned out 1,844 L.F. of channel.

<b>2017-545 / St. Pauls Church Rd Ch #1</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	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	20.0	\$510.30	\$159.85	\$20.35	\$0.00	\$299.10	\$989.60
HAUL / Hauling	10.0	\$222.70	\$94.20	\$43.44	\$0.00	\$144.20	\$504.54
<b>2017-545 / St. Pauls Church Rd Ch #1 Sub Total</b>	<b>30.5</b>	<b>\$744.75</b>	<b>\$254.05</b>	<b>\$63.79</b>	<b>\$0.00</b>	<b>\$449.92</b>	<b>\$1,512.50</b>
<b>Grand Total</b>	<b>30.5</b>	<b>\$744.75</b>	<b>\$254.05</b>	<b>\$63.79</b>	<b>\$0.00</b>	<b>\$449.92</b>	<b>\$1,512.50</b>

Before



During



Project: St. Pauls Church Road Channel #1

Activity: Routine/ Preventive Maintenance

Project #: 2017-545

Township/SW Dist: Port Royal Island/6

Completed: Apr 2017



Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print: 08/07/17

File: C:\project summaries map\St. Pauls Church Road Channel #1\_2017-545



**BEAUFORT COUNTY STORMWATER UTILITY**  
**120 Shanklin Road**  
**Beaufort, South Carolina 29906**  
**Voice (843) 255-2805 Facsimile (843) 255-9436**  
**wstormwater@bcgov.net**



**M E M O R A N D U M**

**TO:** Beaufort County Council  
Beaufort County Stormwater Utility Board  
Gary Kubic, County Administrator

**FROM:** Eric W. Larson, PE, AICP, CPSWQ, CFM

**DATE:** September 21, 2017

**SUBJECT:** A proposed revision to Code of Ordinance Chapter 99 related to Stormwater service fee exemptions for transportation infrastructure, specifically County owned facilities

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Traditionally, the County's Stormwater ordinance has had exemptions to the requirement to pay Stormwater utility fees, or service fees, for public roads. It also exempted private roads within defined rights-of-ways, condominium boat slips, and railroad tracks. (See Section 99-109). However, it should be noted that there are other public transportation infrastructure that function similarly to roads in that the population as a whole benefits from the construction and maintenance of said facilities. In particular, municipal airport facilities and public boat ramps and docks provide a transportation function interconnected with the vehicular roadway system, moving people and goods for business and leisure.

It should be noted that in the case of the County operated airports, each facility has a comprehensive stormwater management plan and are permitted with the South Carolina Department of Health and Environmental Control as an industrial facility. As such, each facility expends significant funds annually for compliance and does not rely on the respective municipal jurisdictions for Stormwater related services. In addition, the stormwater system at the Hilton Head Island Airport is undergoing a ~\$5,000,000 improvement project that is being funded by the Federal Aviation Administration, the South Carolina Aeronautics Commission, and the Airport itself. This system receives stormwater from an offsite light industrial/commercial area on the island, treats the stormwater, and releases it at the opposite end of the airport. The airport maintains this system expending its own funds.

Our County Stormwater Ordinance only exempts roadways and railroad tracks. The attached proposed amendment expands the exemptions allowed by ordinance to include airports, boat ramps and docks, all railroad related properties, and the associated facilities that support and maintain them.

Sec. 99-109. - Exemptions and credits applicable to stormwater service fees.

Except as provided in this section, no public or private property shall be exempt from stormwater utility service fees. No exemption, credit, offset, or other reduction in stormwater service fees shall be granted based on the age, tax, or economic status, race, or religion of the customer, or other condition unrelated to the stormwater management utility's cost of providing stormwater programs, services, systems, and facilities. A stormwater management utility service fee credit manual shall be prepared by the Stormwater Manager specifying the design and performance standards of on-site stormwater services, systems, facilities, and activities that qualify for application of a service fee credit, and how such credits shall be calculated.

(a) Credits. The following types of credits against stormwater service fees shall be available:

- (1) Freshwater wetlands. All properties except those classified as detached single-family dwelling units may receive a credit against the stormwater service fee applicable to the property based on granting and dedicating a perpetual conservation easement on those portions of the property that are classified as freshwater wetlands and as detailed in the stormwater management utility service fee credit manual. The conservation easement shall remove that portion of the subject property from any future development.
- (2) Salt Water Marsh. All properties except those classified as detached single-family dwelling units may receive a credit against the stormwater service fee applicable to the property based on those portions of the property that are classified as salt water marsh and as detailed in the stormwater management utility service fee credit manual.
- (3) Submerged properties. All properties may receive a credit against the stormwater service fee applicable to the property based on those portions of the property that are classified as submerged and as detailed in the stormwater management utility service fee credit manual.
- (4) Those properties that apply for consideration of an adjustment shall satisfy the requirements established by the Beaufort County Stormwater Manager and approved reduced stormwater service fee.

(b) Exemptions. The following exemptions from the stormwater service fees shall be allowed:

- (1) Improved public road rights-of-way that have been conveyed to and accepted for maintenance by the state department of transportation and are available for use in common for vehicular transportation by the general public.
- (2) Improved public road rights-of-way that have been conveyed to and accepted for maintenance by Beaufort County and are available for use in common for vehicular transportation by the general public.
- (3) Improved private roadways that are shown as a separate parcel of land on the most current Beaufort County tax maps and are used by more than one property owner to access their property.
- (4) Railroad tracks, railroad stations, maintenance buildings, or other developed land used for railroad purposes shall be exempt from stormwater service fees. ~~However, railroad stations, maintenance buildings, or other developed land used for railroad purposes shall not be exempt from stormwater service fees.~~
- (5) Condominium boat slips shall be exempt from stormwater service fees.
- (6) Properties determined by the Assessor having 100% of the gross area of the property submerged, salt water marsh, or freshwater wetland will not receive an administrative charge, if applicable in the utility rate structure, AFTER the applicable credit defined in paragraph (a) above has been applied to the account.
- (7) Municipal airport runways, terminals, maintenance buildings, or other developed land used for airport purposes shall be exempt from stormwater service fees.
- (8) Public boat ramps, docks, parking areas, buildings, or other developed land used for public marina purposes shall be exempt from stormwater service fees.

## Draft 2018 Combined Schedule

Stormwater Management Utility Board Schedule	Time	Location	NRC Schedule
December 20, 2017	3rd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, December 18, 2017
January 10, 2018	2nd Wed	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Tuesday, January 16, 2018
February 14, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, February 19, 2018
March 14, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, March 19, 2018
April 11, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, April 16, 2018
May 9, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, May 21, 2018
June 13, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, June 18, 2018
July 11, 2018	2nd Wed	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Summer Break
August 8, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, August 20, 2018
September 12, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, September 17, 2018
October 10, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, October 15, 2018
November 14, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, November 19, 2018
December 12, 2018	2nd Wed 2:00PM	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC	Monday, December 17, 2018



BEAUFORT COUNTY  
STORMWATER MANAGEMENT UTILITY BOARD AGENDA  
Wednesday, November 15, 2017  
2:00 p.m.  
Executive Conference Room, Administration Building  
Beaufort County Government Robert Smalls Complex  
100 Ribaut Road, Beaufort, South Carolina  
843.255.2805

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

1. CALL TO ORDER – 2:00 p.m.
  - A. Approval of Agenda
  - B. Approval of Minutes – October 18, 2017 ([backup](#))
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
  - A. Utility Update – Eric Larson, P.E. ([backup](#))
  - B. Monitoring Update – Eric Larson, P.E. ([backup](#))
  - C. Stormwater Implementation Committee Report – Eric Larson, P.E. ([backup](#))
  - D. Stormwater Related Projects – Eric Larson, P.E. ([backup](#))
  - E. Upcoming Professional Contracts Report – Eric Larson, P.E. ([backup](#))
  - F. Regional Coordination – Eric Larson, P.E. ([backup](#))
  - G. Municipal Reports – Eric Larson, P.E. ([backup](#))
  - H. MS4 Update – Eric Larson, P.E. ([backup](#))
  - I. Maintenance Projects Report – David Wilhelm ([backup](#))
5. UNFINISHED BUSINESS
6. NEW BUSINESS
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
  - A. December 20, 2017 ([backup](#))
9. ADJOURNMENT