



BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA
Wednesday, January 10, 2018
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 – November 15, 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, P.E. ([backup](#))
5. UNFINISHED BUSINESS
 - A. Dirt Road Paving Exemption Discussion ([backup](#))
 - B. Briefing on Okatie West Project
6. NEW BUSINESS
7. PUBLIC COMMENT
8. EXECUTIVE SESSION
 - A. Receipt of legal advice relative to potential abandonment of easements and maintenance for Bessies Ln/Young Circle Ditch.
 - B. Receipt of legal advice relative to potential abandonment of easements and maintenance for Orange Grove Road.
 - C. Receipt of legal advice relative to potential condemnation of easement on or near Palmetto Ridge Drive.
9. MATTERS ARISING OUT OF EXECUTIVE SESSION

10. NEXT MEETING AGENDA
A. February 14, 2018 ([backup](#))

11. ADJOURNMENT

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

November 15, 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 12/07/2017

Board Members

Present

Don Smith
Marc Feinberg
Allyn Schneider
Larry Meisner
William Bruggeman

Absent

James Fargher
Patrick Mitchell

Ex-Officio Members

Present

Andy Kinghorn

Absent

Scott Liggett
Kim Jones
Van Willis

Beaufort County Staff

Eric Larson
Melissa Allen

Visitors

Neil Desai, City of Beaufort
Alan Warren, USCB Lab
Bill Baugher, Town of Bluffton
York Glover, County Council
Alice Howard, County Council
Ellen Comeau, Clemson Extension
Denise Parsick, Beaufort SW Conservation District

1. Meeting called to order – Don Smith

- A. Agenda – Addition to Unfinished Business – Dirt Roads – Approved.
- B. October 18, 2017 Minutes – Approved.

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/2017/111517.pdf>

A. Utility Update – Eric Larson

In regards to items #1 and #5, they will be discussed in unfinished business. In reference to item #4, staff is actively meeting with the Treasurer's, Assessor's and Auditor's offices to improve the data management process for the tax run.

Mr. Larry Meisner asked about Entreladership (item #2). Mr. Larson explained that it is a training series by Ramsey Solutions and that senior management in Stormwater, Public Works and Community Development attended the training webinar.

B. Monitoring Update – Eric Larson

In reference to the USCB Lab report, it includes a summary of routine business. In reference to Item #2, the meeting for the Battery Creek 319 project, the County met with Neil Desai (City of Beaufort) and Alan Warren (USCB Lab) and determined they were not seeing the bacteria reduction that was hoped to be seen. This may be the result of post hurricane damage, so the plan is to make modifications and repairs and do water level testing over the next few months. Additional monitoring will take place once all of the repairs and testing are complete.

Mr. Mark Feinberg asked about the publicity that has been seen about pollutants in the water sheds and in oyster beds. The Town of Bluffton mentioned the need to connect sewers, as there are septic tank issues. He asked if this is a perceived problem or real problem and is it human fecal or animal borne. Mr. Larson said it is both, the Town of Bluffton does DNA and source tracking and failing septic tanks have been found in the process, but not all bacteria problems are related to that and there are other sources.

Mr. Don Smith asked (in reference to septic tanks) what does failing mean or how are they failing. Mr. Larson said failing to the County is when sewage water is coming from the ground and leach fields. Even if it is staying on site it can run off and make it to the ditches. Mr. Smith asked if they are septic tanks failing because of lack of maintenance or high water table. Mr. Bill Bauer said it is both and sometimes they cannot find the cause. Mr. Larson commented there isn't one single problem; it's a little bit of everything.

Mr. Bill Bruggeman asked if Bluffton's goal is to eliminate all septic tanks. Mr. Baugher said yes eventually, where it is feasibly possible. All of the PUD's are on sewer, but not along the old town section or along the May River.

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

The SWIC has not met since the last board meeting.

D. Stormwater Related Projects – Eric Larson

In reference to item #1, Okatie West, the project was referred to the Bluffton planning commission for a hearing that will take place November 15 at 6:00 p.m. in Bluffton, to try to get a development permit for the project. The concern is about the amount of trees that need to be taken down to create the two acre stormwater pond. In response to a question about the next step if they do not give permission, Mr. Larson explained it is a grant funded project and they will need to figure out a way to make it approvable, as there is too much invested in the project.

In reference to item #4, the widening of HWY170, an additional engineering studying is being done to analyze the roadside ditch from Bluffton Parkway and Lawton Station, to satisfy the concerns of adjacent property owners.

E. Professional Contracts Report – Eric Larson

Mr. Larson shared that the project is delayed; the County is waiting on a contract extension request from ATM for more time.

F. Regional Coordination – Eric Larson

In reference to item #4, the Wallace Road drainage project, the County will be using an alternative plan which will avoid DOT right-of-way encroachment and has easement

agreement from the property owners. All but one easement has been granted, but is expected to be given soon. This will allow work to be done behind houses and take advantage of some natural ponds in the area.

Mr. Don Smith asked about Battery Creek Watershed Pond and whether the problems were determined to be design, construction or maintenance issues. Mr. Larson indicated it may be a maintenance issue; the weir is showing signs of seepage and washing and blamed on Irma do to the high flows that went through there. The plan is to repair the weir, clean the inlet and outlet structures, and check the outlet for backflow as well as check the ground levels. Mr. Andy Kinghorn mentioned that it seemed like after a rainfall that the water levels don't drop very rapidly, that it may be something to check.

In reference to #7, the Mossy Oaks task force will be meeting on December 6th.

Mr. Larson mentioned the County met with the district office DOT staff and had a discussion about stormwater once it leaves state right-of-way. He indicated the meeting went well and that they were able to find some common ground.

G. Municipal Reports – Eric Larson

Mr. Neil Desai mentioned that their efforts had been concentrated on maintenance efforts from Hurricane Irma and after the first of the year plan to start some of the small drainage projects that were displaced due to the storm.

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

Mr. Larson mentioned that a \$15,000 extension was made on one of the contracts for plan review and may eventually need to extend the other as well. He is working with administration to find an alternative way to do this plan review, to be less dependent on contractors and more cost effective.

Mr. Larson noted that the number of stormwater permits issue is misleading; staff has met and caught a bug in system. The process has been fixed, there was a miscommunication as to when a permit was to be issued and that has been clarified. Mr. Don Smith asked if any of the violations went past a written notice. Mr. Larson said no, most of the enforcement has been to educate and have seen compliance after they have been educated on what they have done wrong.

The Pond Conference was successful, there were 111 participants registered with very few no shows. As a result of the conference, Ellen is working with a neighborhood (Rose Hill) on some pond maintenance.

Mr. Larson pointed out that the next Lowcountry Stormwater Partners Consortium meeting is on November 28th at 1:30 p.m. in BJWSA Community Room.

I. Maintenance Projects Report – Eric Larson

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

5. Unfinished Business

A. Stormwater Regionalization Update - Mr. Larson noted there are two upcoming meetings where regionalization will be discussed. On November 20th, the Natural Resources Committee (NRC) is meeting in the Executive Conference Room at 2:00 p.m. and the second meeting is on December 5th with the SoLoCo committee at Town of Bluffton at 11:00 a.m.. The SoLoCo meeting will be held to present the findings from the previous meetings and the NRC

meeting will discuss the recommendation to form an exploratory committee. The minutes (regionalization discussion) from last month's Stormwater Utility Board meeting will be included in the meeting packet with the committee's (SoLoCo) minutes.

B. Dirt Road Paving - Mr. Larson presented two text amendments to the Stormwater Ordinance and BMP Manual in reference to the dirt road paving memo that was discussed during the October 18th SWMU Board meeting. Mr. Andy Kinghorn asked if the changes only apply to public and private dirt roads. Mr. Larson responded, only to the County [capital project roads] and explained that the County is not changing the use of the road; it is simply a maintenance activity. A private road that is being upgraded as a part of subdivision or development on the road, they would be changing adjacent land use and use of the road.

Mr. Larry Meisner asked if this applies to DOT state roads also. Mr. Larson said no, explaining it only applies to County roads and that the County doesn't have jurisdiction over State Roads.

Mr. Don Smith commented that an argument could be made that by the County paving a dirt road that it could encourage development along side of it. Mr. Larson mentioned these [proposed amendments] will go to Natural Resources Committee in December. The Board has an opportunity to amend the draft and make clarifications to the proposed revisions to the definition of development.

Mr. Smith asked if they would be surfacing the current footprint of a road because many paving projects involve widening shoulders (i.e. from 20 ft. to 22 ft.) and regrading the ditches and back slopes trying to fix something. Mr. Larson answered yes, that is what they would be doing and they would be reshaping and stabilizing the ditches also.

Mr. Kinghorn shared his opinion in reference to private dirt roads, indicating that if there is no development that would be associated with the dirt road, that they shouldn't be treated any differently than the County and be exempt as well.

Mr. Billy Bruggeman asked what someone paving a long driveway would have to do. Mr. Larson said they would have to prove compliance with the stormwater manual (volume control, peak control, and water quality control). He explained there is a way to do it with a roadside ditch or direct to an offsite pond.

Mr. Meisner asked how many are paving private roads or driveways. Mr. Larson responded that in four years he has not had a request to pave a private dirt road; however, he has been working with the County dirt road paving program.

Mr. Larson noted that in Contract 50 (County dirt road paving project), the design engineer looked at downstream conveyance and the County worked to get easement to the outfall (from the road to the marsh) so the County would have the ability to do drainage maintenance if necessary.

Discussion took place about considering exempting private driveways as well. Mr. Larson noted that a driveway has a different definition from private road. He explained that the language in the amendment is very specific to the policy statement 15 and 17; therefore, if the Board wanted to recommend anything beyond that he would need to add additional language.

In reference to a question, Mr. Larson explained that the purpose is to exempt Contract 50 from having to do stormwater as part of the project. There is a difference between a driveway serving a house or two residences and a private road serving several homes.

Mr. Feinberg asked if we are turning a blind eye to a potential problem, by exempting a road without looking at it. Mr. Larson explained that a dirt road has an increased sediment load when it rains and washes off into the ditch. Pollutants attach to the dirt and that dirt and sediment

is getting into the water. When you pave a road you no longer have erosion into the ditch and can stabilize the ditch, the vegetation in the ditch can clean the water. The ditch may have less sediment, but might have more pollutants that run off of the paved road. Paving dirt roads reduces maintenance costs and provides a safer more stable surface, which is of the greater good to the public from a non stormwater point of view, knowing that stormwater is not the only factor.

In response to a question, Mr. Larson mentioned that the roads (to be paved) are very short sections, less than 2 miles with a few being dead-end roads.

A motion was made to move forward to recommendation approval as written. The motion failed (2:3). Mr. Larson offered the option that he could draft another proposed exemption now that he understands Board's concerns and email it out for comments. Action would then be postponed until January.

Discussion took place about dead-end roads. Mr. Larson (not knowing CTC's process to determine what roads qualify to be paved) thinks it is likely demand driven [servicing several homes]. Mr. York Glover asked what is considered to be a dead-end road and expressed that most of the roads are going to come to an end at some point and there are houses at the end of some of them. He expressed that in a rural community that dirt roads need to be paved for safety and conditions. Mr. Larson clarified that he was referring to roads that end at a driveway/property and do not come around to an intersection of another road.

Mr. Larson mentioned he would get with Community Development to see what the definition of a driveway versus a public and private dirt road open to the public is.

An alternative motion was made to recommend Eric go back to see if there is alternative language with respect to private dirt roads. The motion was approved (5:0).

[The Contract 50 Road Paving, Development and Stormwater memo, BMP Manual Proposed Revisions and Ordinance Proposed Revisions](#) are attached.

6. New Business –

Mr. Billy Bruggeman asked if the stormwater department has been involved with the new animal control facility on HWY170. Mr. Larson responded yes, the facility will have a wet detention pond on site (dog bone shaped) and porous pavement and it meets the standards.

7. Public Comment(s) – None.

8. Next Meeting Agenda – Approved.

A motion was made to skip the December 20, 2017 meeting. The Board unanimously (5:0) voted to cancel the December meeting.


The next meeting will be on January 10, 2018.

Additions to January 10, 2018 Agenda

- Unfinished Business -
 - Dirt Road Paving
 - Special Presentation – TBD (one of topics below)
 - Animal Control Facility – Stormwater Controls
 - Convenience Center Update
 - Road Paving Program Criteria

9. Meeting Adjourned

MEMORANDUM

TO: Beaufort County Council
Public Facilities Committee Chairman Stu Rodman
Joshua Gruber, Interim County Administrator 

FROM: Robert McFee, Division Director of Construction, Engineering and Facilities
Eric Larson, Division Director for Environmental Engineering & Land Management
Anthony Criscitiello, Community Development Director

SUBJ: **Contract #50 Road Paving, Development, and Stormwater**

DATE: October 5, 2017

There has been some debate regarding the dirt road paving program and its compliance with adopted Beaufort county ordinances, specifically related to the Community Development Code road assemblies and Stormwater Management requirements.

Community Development Code

It should be noted that from a local historical perspective, this program has never sought to secure development permits, but has complied with the appropriate NPDES provisions.

In reviewing Section 1.3.10 of the Community Development Code (CDC), it clearly states that the code applies to “.. the *development* of all land within unincorporated Beaufort County”. Further, section 1.3.20 confirms the code “shall apply to *development* by the County or its agencies and departments”.

Article 10, section 10.1.40 of the CDC defines what constitutes *development*:

“Development. This term includes the following:

- *All construction, modification, or use of any lot, parcel, building or structure.*
- *All disturbances of land surfaces of 10,000 square feet or greater, including removal of vegetation, excavation, filling, and grading.*
- *Any subdivision of a parcel or tract of land into two or more lots, parcels, or pieces for the purpose, whether immediate or future, of sale or transfer of title.”*

Using this definition, the second bullet point would apply to the paving of dirt roads and place this activity under the jurisdiction of the CDC.

However, another way to interpret development that falls under the jurisdiction of the CDC is to look at the definition of a major land development in section 7.2.60. This section defines a major land development Plan as:

- (1) “Non-residential development of more than 5,000 square feet of gross floor area;
- (2) The addition of 5,000 square feet or 30 percent or more of the original building of a non-residential development which results in a building larger than 5,000 square feet; or
- (3) Apartment or multi-family development of six dwelling units or more.”

Using this interpretation, the paving of dirt roads would not fall under the jurisdiction of the CDC.

As to the applicability of the Thoroughfare Standards in Article 2: Multi-lot and Single lot Community Scale Development, section 2.1.10—Purpose and Intent, states that “This Article then provides standards for laying out blocks, lots, open space set-asides, and thoroughfares within each community type. This ensures that new communities are both contextual and appropriately integrated with their surroundings”. This purpose and intent statement can be interpreted that the standards within Article 2 only apply to the creation of new lots, streets, and blocks.

However, Section 2.9.20 of the CDC that deals with the applicability of the County’s thoroughfare standards states that the “thoroughfare standards are applicable for the transformation of existing thoroughfares and the creation of new thoroughfares in any areas within the conventional and transect zones.” The phrase, "transformation of existing thoroughfares" can be interpreted to apply to the paving of dirt roads.

Given the historic precedent of not requiring the paving of dirt roads to follow local development standards and conflicting language in the Community Development Code, it can be interpreted that the CDC is not designed or intended to act as a rule for the narrow practice of the county dirt road paving program.

Stormwater Management

With respect to the NPDES/Stormwater Ordinance and MS4 aspects of the road paving program, the requirements for regulated small MS4s, the requirements for small construction activity (primarily activity disturbing between 1 and 5 acres of land) are not detailed in the Phase II regulation. Rather, the requirements are left to the discretion of the NPDES permitting authority when it develops the small construction activity permit. (see <https://www3.epa.gov/npdes/pubs/comguide.pdf>).

Beaufort County Code of Ordinances Chapter 99-106 defines developed land as “property altered from its natural state by construction or installation of improvements such as buildings, structures, or other impervious surfaces, or by other alteration of the property that results in a meaningful change in the hydrology of the property during and following rainfall events”. Further in Chapter 99-203 it states that development is “All project construction, modification, or use of any lot, parcel, building, or structure on land and on water.” The Beaufort County Manual for Stormwater Best Management and Design Practices (the BMP Manual) provides guidance in Section 2.1.1.1 stating “All development that creates runoff and/or discharge may adversely impact water quality in county streams, lakes and tidal waterbodies. Therefore, all proposed development and redevelopment shall be required to submit a Drainage Plan to show compliance with the peak attenuation, water quality, volume and construction pollution control requirements in this manual...”. It is also noteworthy that the Stormwater ordinance and BMP Manual do not distinguish between development and re-development, applying that re-development is simply yet another alteration of the property and therefore also categorized as development.

In the design process, commonly accepted engineering practices would assign a runoff coefficient to all surfaces. Paved surfaces such as asphalt or concrete would be given a higher runoff value than an exposed dirt surface, even if the surface was a compacted dirt road. The issue is that in theory, paving does increase runoff. It is hard to deny that paving a road is an improved alteration of the land, hence the basis for categorizing dirt road paving as “development”.

However, it must be noted that public and private roadways are exempt from the collection of stormwater fees. This exemption is based on the premise that most infrastructure belonging to the Beaufort County MS4 consists of roadside ditches and pipes within the roadway and that charging the community for the runoff created by the road is simply a pass through charge resulting in higher rates and therefore unnecessary.

In the case of using a rural cross section in dirt road paving, it should be understood that the paving of a dirt road has benefits to water quality by establishing grass shoulders and ditches, reducing the sediment load and improving our ability to properly maintain the drainage system.

In actual practice for the dirt road paving program, when filing the NPDES permit, our practice has been to classify the *entire grading area* as 'disturbed limits'. This hyper-conservative approach has been adopted by engineers to avoid the discussion with regulatory staff over what, exactly, the disturbed area really is. However, it is not at all unreasonable to assert a dirt road which is regularly graded is **already in a disturbed state and remains so as long as it is dirt**. Paving the roadway and establishing vegetated shoulders and ditches therefore stabilizes the disturbed area reducing sediment / pollutant loading and reduction in runoff rate and volume.

If this obvious condition is recognized, the adjustment in disturbed area is insignificant and it more properly reflects the *de minimus* impact of the improvement. In addition, these roadway improvements do not alter the hydrology of the property in meaningful way even if the difference in runoff coefficients would indicate otherwise. In fact, it is suggested that paving the road improves the hydrologic performance of the rights-of-ways.

Conclusion

Based on the interpretation of existing codes related to community development and stormwater management, this information supports the recommendation that the dirt road paving program be exempt from the provisions of the CDC and Stormwater ordinance.

ORD. 2016-201 / 38, 10 -24 -2016201

AN ORDINANCE TO AMEND THE STORMWATER MANAGEMENT UTILITY ORDINANCE 2016/26
38 AS ADOPTED ~~SEPTEMBER 26~~OCTOBER 24, 2016 TO PROVIDE FOR THE ADDITION OF
ARTICLES III, IV, V, AND VI RELATED TO ADOPTION OF STORMWATER MANAGEMENT
STANDARDS TO MEET MUNICIPAL SEPARATE STORMSEWER SYSTEM (MS4) PERMIT
REQUIREMENTS THE DEFINITION OF "DEVELOPMENT" AND EXEMPTIONS RELATED TO
COUNTY DIRT ROAD PAVING

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

WHEREAS, Chapter 99, Article II, "Stormwater Management Utility" was adopted on August 27, 2001 and was modified by Ordinance on August 22, 2005, September 28, 2015, ~~and~~ September 26, 2016, and October 24, 2016; and

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

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

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

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

WHEREAS, pursuant to the requirements mandated by the Municipal Separate Stormsewer System (MS4) permit issued by the South Carolina Department of Health and Environmental Control (DHEC) on December 1, 2015, Beaufort County is required to adopt standards related to stormwater management and create a regulatory framework to enforce the same; and

WHEREAS, the Beaufort County Stormwater Utility Board has amended the Manual for Stormwater Best Management and Design Practices (BMP Manual) as the source of the technical stormwater standards used in the development of Stormwater Plans and adopted the same on September 14, 2016; and

WHEREAS, the Stormwater Utility Board has determined that limited County capital improvement functions, specifically dirt road paving, should not be subject to certain stormwater requirements typically required for development; and,

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

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

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

Chapter 99 - STORMWATER MANAGEMENT

ARTICLE I. - IN GENERAL

Secs. 99-1—99-100. - Reserved.

ARTICLE II. - STORMWATER MANAGEMENT UTILITY

Sec. 99-106. - Definitions.

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

Developed land. Developed land shall mean property altered from its natural state by construction or installation of improvements such as buildings, structures, or other impervious surfaces, or by other alteration of the property that results in a meaningful change in the hydrology of the property during and following rainfall events. Existing dirt roads which are improved and or paved as part of Beaufort County's Dirt Road Paving Program as set forth in Beaufort County Policy Statement 15 and Policy Statement 17 are deemed not to constitute "developed land".

Article III. – REGULATORY GENERAL PROVISIONS

Sec. 99-203. - Definitions

The following definitions shall apply in Articles III, IV, V, and VI this Ordinance. Any term not herein defined shall be given the definition, if any, as is found elsewhere in the Code of Ordinances of Beaufort County, including the Community Development Code (CDC) Ordinance.

Development. All project construction, modification, or use of any lot, parcel, building, or structure on land and on water. Existing dirt roads which are improved and or paved as part of Beaufort County's Dirt Road Paving Program as set forth in Beaufort County Policy Statement 15 and Policy Statement 17 are deemed not to constitute "development".

Section 2

Stormwater Design Criteria

2.1 General Planning and Design Requirements

2.1.1 General Standards

General planning and design requirements for stormwater management are as follows:

1. All development that creates runoff and/or discharge may adversely impact water quality in county streams, lakes and tidal waterbodies. Therefore, all proposed development and redevelopment shall be required to submit a Drainage Plan to show compliance with the peak attenuation, water quality, volume and construction pollution control requirements in this manual, with the following exceptions:
 - a. Total disturbed area is under 5,000 square feet (sq ft). Disturbed area shall include all areas utilized for construction, access, and storage of materials that are disturbed.
 - b. Any maintenance, alteration, renewal use or improvement to an existing drainage structure as approved by the stormwater manager that does not create adverse environmental or water quality impacts and does not increase the temperature, rate, quality, volume or location of stormwater runoff discharge.
 - c. Site work on existing developed sites 1-acre or less, where impervious area is increased by less than 5,000 sq ft, and earthwork does not increase runoff and/or eliminate detention/retention facilities and/or stormwater storage or alter stormwater flow rates or discharge location(s).
 - d. Agricultural activity not involving relocation of drainage canals.
 - e. Work by agencies or property owners required to mitigate emergency flooding conditions. If possible, emergency work should be approved by the duly appointed officials in charge of emergency preparedness or emergency relief. Property owners performing emergency work will be responsible for any damage or injury to persons or property caused by their unauthorized actions. Property owners will restore the site of the emergency work to its approximate pre-emergency condition within a period of 60 days following the end of the emergency period.
 - f. Golf courses are required to comply with all site runoff volume and water quality control and drainage planning and design requirements. However, both golf courses and private lagoons shall be exempt from the peak attenuation requirements.

f.g. Existing dirt roads which are improved and or paved as part of Beaufort County's Dirt Road Paving Program as set forth in Beaufort County Policy Statement 15 and Policy Statement 17 are deemed not to constitute "development" under the County Code of Ordinance Chapter 99 (Stormwater Utility Ordinance), MS4 Program or this BMP Manual and are, therefore, exempt from the provisions and requirements herein.

2. Compliance with this section shall be demonstrated by the submission of detailed plans and calculations showing compliance through the use of BMPs provided within this manual. Detailed hydraulic and hydrologic calculations will be provided in a written report showing methodology and inputs for required calculations. All calculations and plans must be signed and sealed by a qualified professional registered under the South Carolina Division of Professional and Occupational Licensing.
3. Priority wetlands or other significant wetlands identified on the official County conservation district maps, or the Federal National Wetlands Inventory should not be adversely impacted by the construction of BMP facilities in or near them, which deprives them of required runoff or lowers their normal water table elevations. Adjacent BMPs that benefit retention of normal wetland water table elevations are acceptable. If the BMP's proposed location is near a priority wetland, the applicant must provide data showing that impacts will not be detrimental to the wetland hydrology.
4. Measures used to collect and convey stormwater on any site ("stormwater management facilities") shall be designed to meet the following minimum performance standards:
 - a. Prevent erosion damage and satisfactorily carry off or detain and control the rate of release of surface waters.
 - b. Carry surface water to the nearest adequate street, storm drain, detention basin, natural watercourse, or drainage facility.
 - c. Control/accommodate not only the anticipated peak discharge from the onsite disturbed area but also the existing runoff being contributed from all land at a higher elevation in the same watershed.
 - d. No stormwater runoff or natural drainage shall be so diverted as to overload existing drainage systems or create flooding or the need for additional drainage structures on other private properties or public lands. Please see Appendix G regarding the Common Enemy Law.
 - e. All stormwater management facilities shall be designed to satisfy the following requirements:
 - i. They shall be capable of withstanding the discharge associated with the 100-year return rainfall event, without failing or resulting in damage to downstream areas. Some nondetention facilities may be designed to bypass stormwater discharges that are in excess of the appropriate design storm. In this case, conveyance must be provided to transport the 100-

year surcharge flow to downstream facilities, a natural watercourse, or storm drainage system inlet.

- ii. All infiltration devices shall be protected from sedimentation. Areas designated for recharge shall not receive runoff until the contributory drainage areas have achieved final stabilization.

5. No new stormwater discharge shall be permitted onto any beaches/shorelines.
6. Final landscape designs and plantings shall not adversely impact the stormwater runoff, volume and quality controls and drainage concepts approved as part of the development permit approval process. Landscape design and plantings should enhance opportunities for percolation, retention, detention, filtration and plant absorption of site-generated stormwater runoff.
7. Irrigation systems used for complying with these stormwater requirements must use of all available surface runoff or other retained or detained stormwater as the water supply source. No groundwater wells or use of potable water for irrigation of any kind will be permitted in developments or redevelopments unless it can be demonstrated that alternative sources of irrigation water are required beyond the amount needed to meet volume control standards in this manual, or other extenuating circumstances apply. Any use of potable water sources must be approved by the stormwater manager. In addition, the design standards outlined in the Fact sheet for Irrigation (PTP-10) shall apply to all irrigation systems. In the case of extenuating circumstances, the designer may present alternate design standards. These must be approved by the stormwater manager prior and calculations and backup data must be presented for review.
8. The developer shall provide adequate outfall ditches, pipes and easements downstream from the proposed discharge if adequate public or private drainage facilities do not exist to carry the proposed discharge. If the outfall ditches, pipes and easements required for adequate drainage are larger than those needed to carry the additional proposed discharge from the development sought by the applicant, the County may bear those incremental costs that are greater than those properly allocable to the development. The County shall have the authority, however, to condition use of such expanded system by subsequent users on contributions by such users for allocable portions of the cost borne by the County.



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



January 10, 2018

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Utility Update

1. Southern Regional Planning Committee (SoLoCo) – The technical subcommittee for Stormwater presented the finding of the committee report at the December 5th meeting. The Committee was in agreement to continue to work together and develop a draft regional Stormwater standard. The technical subcommittee is being scheduled for January to define a scope of work for the committee.
2. Regionalization
 - a) In addition to the above, the SoLoCo committee seemed open to the concept of a regional Stormwater authority. They asked the technical subcommittee to draft a mission statement for an exploratory committee.
 - b) Staff also met with staff of the Coastal Conservation League to discuss current issues within the region.
3. Staffing – Our GIS staff member, Seth Stanbery, resigned in December. With his departure, the County's MIS Department is going to expand staff to assume the Stormwater GIS workload. The position will be funded by the Stormwater Utility Management fee as it has in the past.

Monitoring Update

1. Lab Update (From Dr. Alan Warren and Lab Manager Danielle Mickel) –
 - a) Beaufort County:
 1. Met with Danny and Daniel (BC) on 11/29/17 to visit US 278 ponds and discuss possible collection locations.
 2. Meeting on 12/6/17 to discuss 278 ponds.
 3. BC decided to continue MS4 collection and analysis without any changes until further notice.
 - b) Town of Bluffton:
 1. Continue with weekly sample analysis.
 2. MS4 collection and analysis is completed for 2017.
 - c) Palmetto Bluff:
 1. Monthly sampling and analyses for wet and dry events.
 2. Data reduction/reporting.
 - d) GEL-HHI:
 1. Analysis for Hilton Head Island E. coli samples 4x/Qtr, including data reduction/reporting.

- e) Leamington Community:
 - 1. Quarterly collection and analyses of Leamington's stormwater lagoon system to include; data reduction/reporting, consultation.
- f) USCB Lab:
 - 1. Monthly (and as needed) calibration of equipment and instruments.
 - 2. Certification Upkeep-including review of QA/QC, logbooks, COC's.
 - 3. On-going efforts to obtain additional certification; no new certs obtained during this Qtr.
 - 4. Monthly sterility checks on Lab water for TOC, TRC, HPC, Conductivity, metals.
 - 5. Research on software for laboratory management systems.
 - 6. Account tracking for all accounts-expenditures, deposits, ledgers, PO's
 - 7. Logistics, planning, scheduling of all activities.
 - 8. Procurement of all required materials, supplies and equipment.
- 2. Post Construction monitoring of special projects – Staff has been working with USCB staff to define a post construction monitoring plan for the Bluffton Gateway project and the 4 stormwater ponds along US 278. Due to numerous factors, the County is considering issuing a RFP for outside lab assistance with the monitoring effort.

Stormwater Implementation Committee (SWIC) Report

- 1. The SWIC committee has not met in the last month.

Stormwater Related Projects

- 1. Okatie West / SC 170 Widening Retrofit (Design and Construction = \$915,000 Budget) – All permits, with the exemption of one individual wetland impact permit from the USACE, are in place or will be once the USACE permit is complete. Bidding began with bids due January 16, 2017. A non-mandatory pre-bid meeting was held in December. DHEC staff and County representatives held a project review meeting on site in December. Due to the tight project schedule, the bid award recommendation will go directly to the County Council on January 22, 2018.
- 2. Easements – Staff is working on numerous easement requests and meets monthly to review status.
- 3. Stormwater workload / work order prioritization system – The Consultant, FM&E, is working on our workload prioritization and management tool. Draft results are promising. They will be finalizing the tool and populating it with current data in January. A select number of SW infrastructure crew is working five, 10 hour days in an attempt to reduce the backlog. Project cost \$10,000.
- 4. SC 170 widening – Andrews Engineering was hired to study the function of a recently constructed roadside ditch to validate or contradict concerns from the adjacent property owners that it is not functioning as intended by the design. The final report is pending but the draft results shared with staff indicate the ditch can handle the design flow. The study also validates past conclusions about Stormwater movement within ROW and on adjacent properties. Mr. Larson met with Josh Gruber and Councilmen Mike Covert on site to review the drainage concerns. We will be meeting with County Council

representatives and the landowner on January 17th to discuss the report findings. Project cost \$10,000.

5. Winter Storm Grayson – Stormwater crews were on standby to remove ice covered fallen trees and apply sand to slick county owned bridges. There was only a few events to address.

Professional Contracts Report

1. Stormwater Management Plan (Master Plan) Update – (\$475,000 Budget; \$239,542 County portion) – ATM is working on a full draft CIP plan for SWIC review and beginning to work on the final project report. The project is delayed at no fault of the County. A no cost change order for additional time was approved by the SWIC. The new completion date is March 31, 2018.
2. CIP FY 18 Grouping Stormwater Projects – (Design - Ward Edwards \$202,000, Andrews Engineering \$560,490, Const. est. \$5,512,900) - Property owners are still being contacted to gain access for surveying and survey work has begun. We had one property owner refuse access. The consultant firm is now considering alternative designs that would avoid this parcel. All projects are in early design phase.

Regional Coordination

1. Factory Creek Watershed Regional Detention Basin “Phase I” & Academy Park Subdivision (Design Cost. \$49,873, Tree Mitigation Cost is pending, Construction Cost by the Developer) – Nothing new to report.
2. Factory Creek Watershed Regional Detention Basin “Phase II” (Design Cost = \$63,390, Tree Mitigation Cost is pending, Construction Cost by the Developer) – Permitting for the final stage of construction is pending. Construction should begin soon.
3. Wallace Road drainage – We have obtained all easements. All work will be done in-house using the Stormwater crew.
4. Municipal “County” Infrastructure – No change.
5. Mossy Oaks Task Force – A stakeholder meeting was held on January 5, 2018. The group did not meet in December as planned. A report of the January 5 meeting will be presented at the January 10th SWUB meeting.
6. Dirt Road Paving and Stormwater - The Planning Commission approved revised language for the Community Development Code at their December 4, 2017 meeting. After several iterations being distributed by email to the SWUB, we are ready to approve final draft language for the BMP Manual and Stormwater Ordinance. This will be covered under Old Business.
7. Floodplain Management – Mr. Larson participated with Hakim Bayyoud, Floodplain Manager, for an interview on County Channel’s Coastline show. The topic was the new flood maps and how Stormwater interacts with floodplain management.

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 19 projects reviewed in November and December 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. One contract was extended to \$25,000. It is anticipated the other consultant will allow require an extension of the fee. Rebecca Baker, our MS4 coordinator, has returned to duty and will be assuming the role once again.

PROJECT NAME	PROJECT TYPE	AGENDA REVIEW DATE
BJWSA Solar Array St. Helena WWTP	Final	11/02/17
Freeport Marina & Cooper River Landing Village	Pre-app	11/06/17
Okatie Wine & Spirits	Pre-app	11/08/17
Okatie Center PUD S-17	Pre-app	11/13/17
Best Buy Center Phase 2 Johnson Tract	Pre-app	11/13/17
Southern Fence	C of C	11/13/17
Okatie Center PUD S-12C	Final	11/22/17
1316 Fording Island Rd	Conceptual	11/22/17
David Garris River Buffer - Port Royal Island	River Buffer	12/04/17
Celadon Regulating Plan	Conceptual	12/04/17
Cuffy Mine Burrow Pit	Mine	12/05/17
Moss Creek – Lot 645 – Toppin	View Corridor	12/06/17
Crosby 71 Pepper Hall Plantation	Bulkhead	12/06/17
Berkeley Hall Lot 363	River Buffer	12/11/17
Suburban Lodge	Text Amendment	12/11/17
Moss Creek – Lot 645 – Toppin	Final	12/27/17
Crosby 71 Pepper Hall Plantation	Bulkhead	12/27/17

Cuffy Mine Burrow Pit	Conceptual	12/27/17
1316 Fording Island Rd	Conceptual	12/27/17

2. Stormwater Permits – There were 57 permits issued in November (30) / December (27).
3. Monthly Inspection summary for November / December:
 - a) Number of active permits = 112
 - b) Number of inspections performed = Nov (74) / Dec (71)
 - c) Number of drainage related complaints investigated = Nov (1) / Dec (0)
 - d) Number of IDDE issues received and investigated = Nov (3) / Dec (2)
 - e) Number of Violations (verbal, written, fines, or stop work orders) = Nov (4) / Dec (1)
 - f) Number of Development Permit certificates of completion = Nov (4) / Dec (5)
4. 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. ATM has been working on completing the Year 2 permit activities and beginning to draft the annual report due in March. Rebecca Baker, our MS4 coordinator, has returned to duty and will be assuming the role once again.
5. Public Education – Lowcountry Stormwater Partners (LSP), via Carolina Clear, continues to work on several initiatives towards public education and outreach.
 - a) Staff attended the quarterly LSP Partners meeting held November 28, 2017. The special presentation was from Dr. Eric Montie at USCB related to his research in water quality in the May River using acoustics.
 - b) County Public Works and Stormwater staff spoke at the monthly Utility Company Coordination meeting in December. The topic was current project and county permitting requirements for construction.
 - c) No additional update was available at the time of this report.

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. Action Plan Update is currently planned for initiation in FY19 and completion in FY20.
Sewer Connection & Extension Policy	Council adopted the Sewer Connection & Extension Policy at 9/26/17 meeting. Staff has commenced implementation with BJWSA coordination for prioritization of sewer extension in Old Town, currently revising Sewer Connection Ordinance, and initiating septic system maintenance education.
ACTIVITY - PROJECTS	STATUS
Sanitary Sewer Extension	Buck Island/Simmons Road (BIS) Phases I, II, III and IV are completed. Toy Fields is completed. Current project updates are included in Engineering Consent Agenda under "Sewer & Water."
May River 319 Grant Phase 1 - New Riverside Pond (Grant award of \$483,500 in 2009)	Completed in 2013. Per water quality tests, a statistically significant reduction in fecal coliform bacteria concentration exists pre-pond versus post-pond. However, bacteria levels re-load prior to discharging into the May River, leading to additional BMP installation of Filtrex proprietary filter socks. Installed 12/12/17 to maintain bacteria
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 - Workplan Amendment Approved by EPA and SCDHEC (Grant award of \$231,350 in 2016)	Staff submitted a workplan amendment to SCDHEC & EPA for this grant award which, was verbally approved. Awaiting revised grant contract to begin design. Current project is on hold pending revised contract.
Stoney Creek Wetlands Restoration: Preliminary Design Phase	Wetlands restoration project with the goal to reduce stormwater volume reaching the May River. Current project updates are included in Engineering Consent Agenda.
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. Currently proposed for completion in FY20 following the Action Plan Update.
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. Current updates are included in Engineering Consent Agenda and Attachment 9.
Water Quality Monitoring Program (MS4 Minimum Control Measure #3)	<ol style="list-style-type: none"> 1. SCDHEC Shellfish monitoring results 2. Fecal coliform bacteria "hot spot" concentrations 3. Microbial Source Tracking of human sources of bacteria 4. Illicit Discharge investigation and monitoring 5. BMP efficacy monitoring 6. MS4 monitoring Current updates are included in Engineering Consent Agenda Attachments 2, 3b, 3c, and 3d.
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. Current updates are included in Engineering Consent Agenda Attachment 3a.
Sediment & Erosion Control Program (MS4 Minimum Control Measure #4)	Sediment and erosion control inspections with escalating enforcement response. Current updates are included in Engineering Consent Agenda Attachment 4.
Development Plan Review Program (MS4 Minimum Control Measure #5)	SCDHEC delegated plan review-related activities. Current updates are included in Engineering Consent Agenda Attachment 5.
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. Current updates are included in Engineering Consent Agenda Attachment 6 and under "Public Works."
Septic System Maintenance Program	FY18 funding is \$10,000 and administered by Growth Management via the Neighborhood Assistance Program (NAP). On-going assistance offered to Town residents regardless of financial status through Neighborhood Assistance Program. Current updates, as reported by NAP, are included in Engineering Consent Agenda Attachment 7.
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. Council adopted the Sewer Connection & Extension Policy at 9/26/17 meeting. CIP projects will be prioritized as part of Strategic Planning in January 2018. Sewer Connection Ordinance changes anticipated 1st quarter 2018.

SCDHEC Shellfish Harvesting Monitoring Data

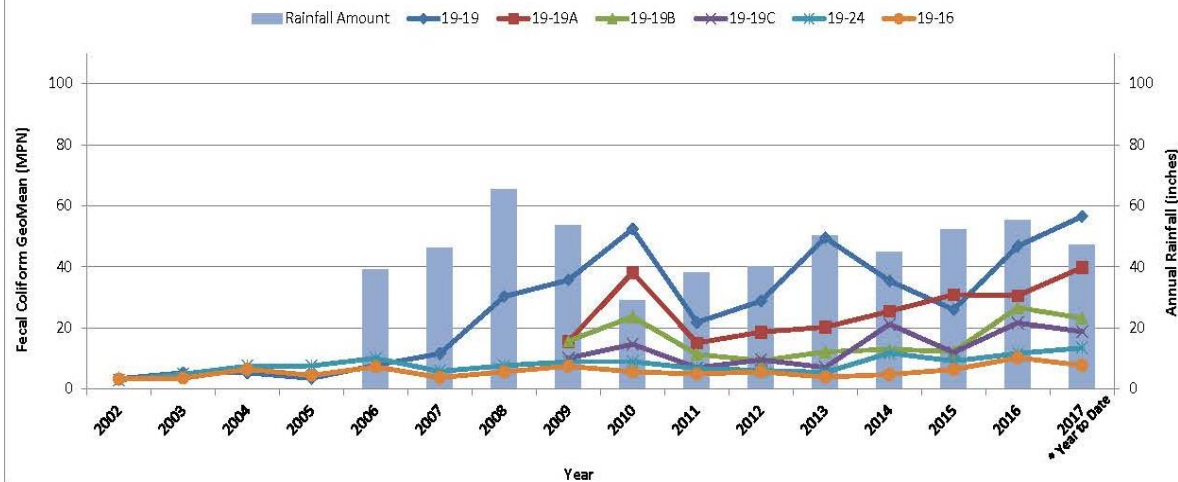
	19-19				19-19A				19-19B				19-19C				19-24				19-16			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)	Fecal Coliform (MPN)
December	11.0	110.0	79.0	1600.0	7.8	33.0	23.0	920.0	11.0	27.0	49.0	540.0	23.0	7.8	33.0	240.0	33.0	6.8	7.8	220.0	13.0	4.5	23.0	49.0
November	49.0	NS	33.0	49.0	33.0	NS	13.0	33.0	17.0	NS	7.8	7.8	33.0	NS	14.0	31.0	31.0	NS	13.0	2.0	6.8	NS	33.0	2.0
October	17.0	23.0	NS	22.0	7.8	49.0	NS	49.0	4.5	4.5	NS	33.0	6.8	23.0	NS	23.0	4.5	7.8	NS	6.8	2.0	4.5	NS	2.0
September	27.0	46.0	23.0	17.0	17.0	17.0	110.0	7.8	2.0	9.3	23.0	11.0	4.5	17.0	13.0	4.5	4.5	23.0	4.5	2.0	2.0	4.5	7.8	1.8
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																								
Average Annual GeoMean	35.4	26.0	46.8	56.5	25.5	30.9	30.6	39.8	13.0	12.3	26.7	23.3	21.2	12.0	21.7	18.8	11.8	9.2	11.7	13.5	4.6	6.4	10.3	7.7
** Truncated GeoMetric Mean	31.0	37.0	37.0	44.0	17.0	21.0	30.0	36.0	10.0	11.0	16.0	20.0	7.0	11.0	16.0	16.0	6.0	7.0	9.0	10.0	4.0	4.0	6.0	7.0
** Truncated 90th Percentile	207.0	205.0	105.0	203.0	82.0	95.0	89.0	133.0	40.0	51.0	69.0	83.0	29.0	55.0	65.0	57.0	21.0	30.0	29.0	37.0	13.0	13.0	21.0	29.0

NS = No Sample

AS = Additional Samples

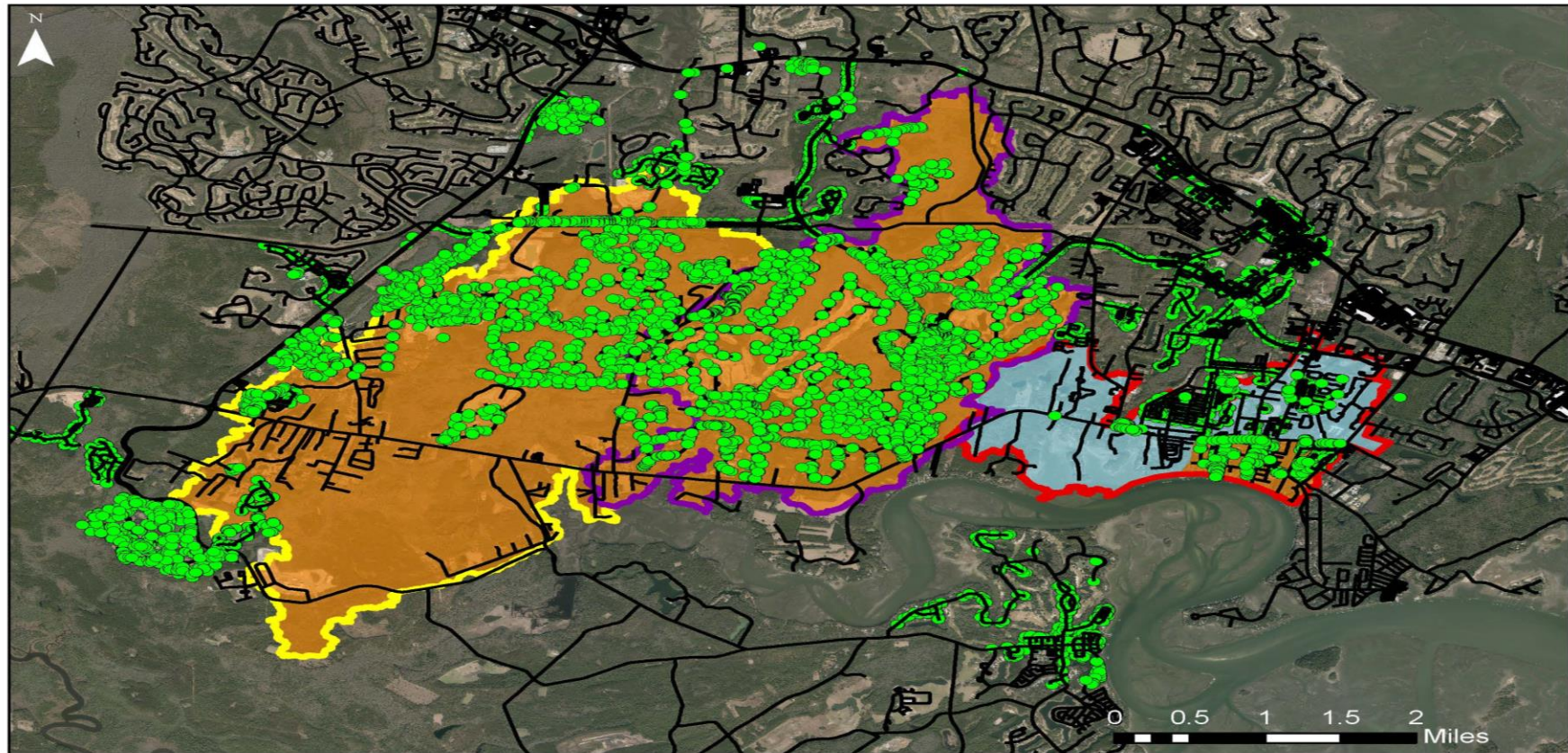
** Town staff calculations utilizing DHEC statistics

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

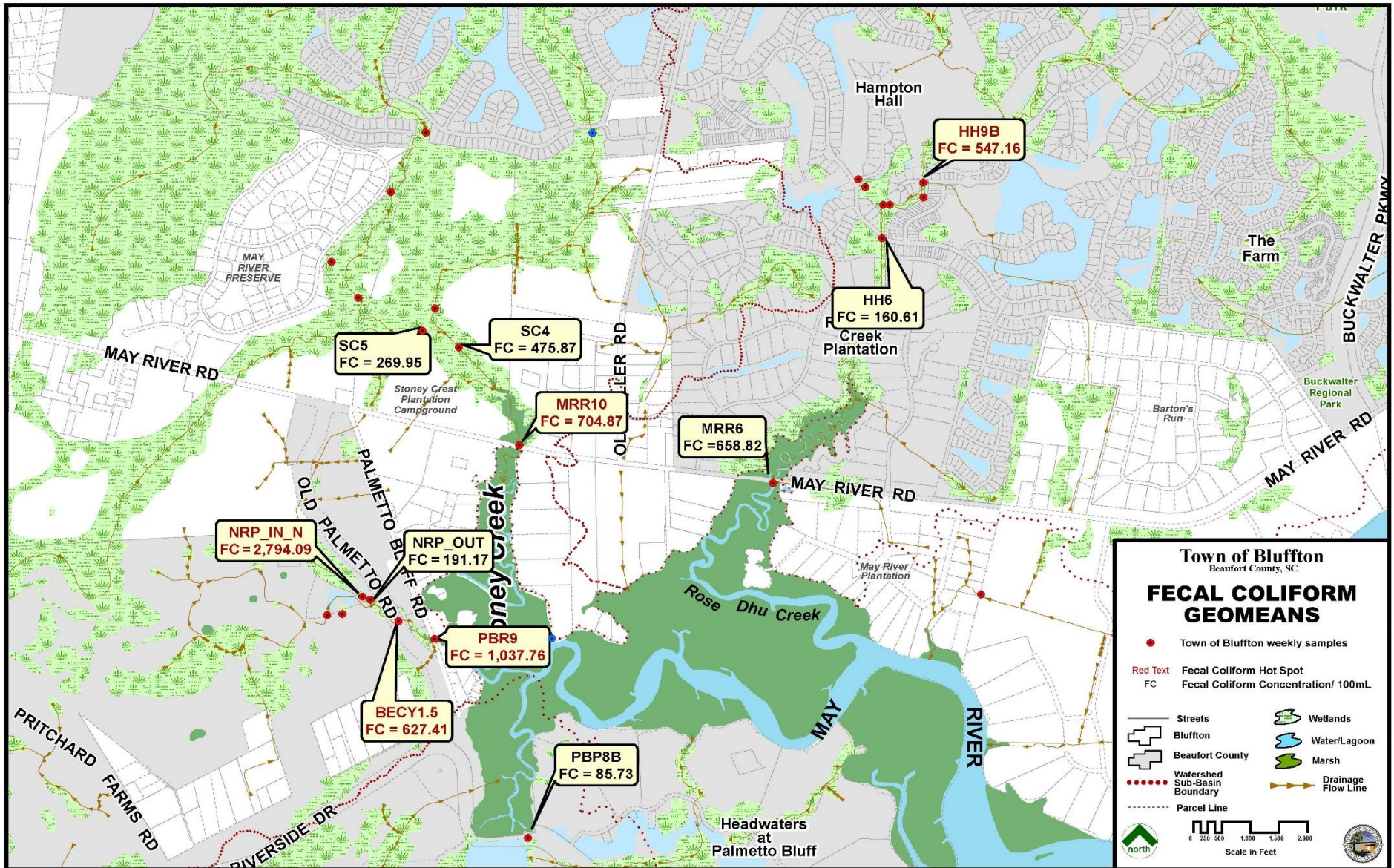
- Completed
- In Progress
- Inventoried SW Utilities
- Mid River/Old Town
- Rose Dhu Watershed
- Stoney Creek Watershed

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Stormwater Infrastructure Inventory Collection Status

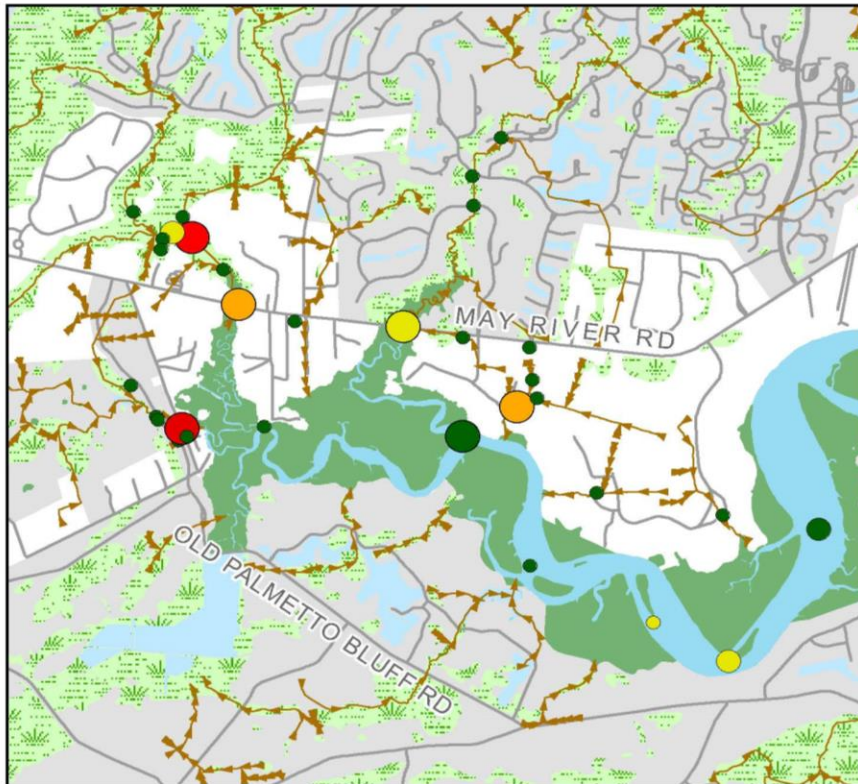
FY 2018 YTD Collection Totals	2,541
FY 2017 Collection Totals	3,874

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

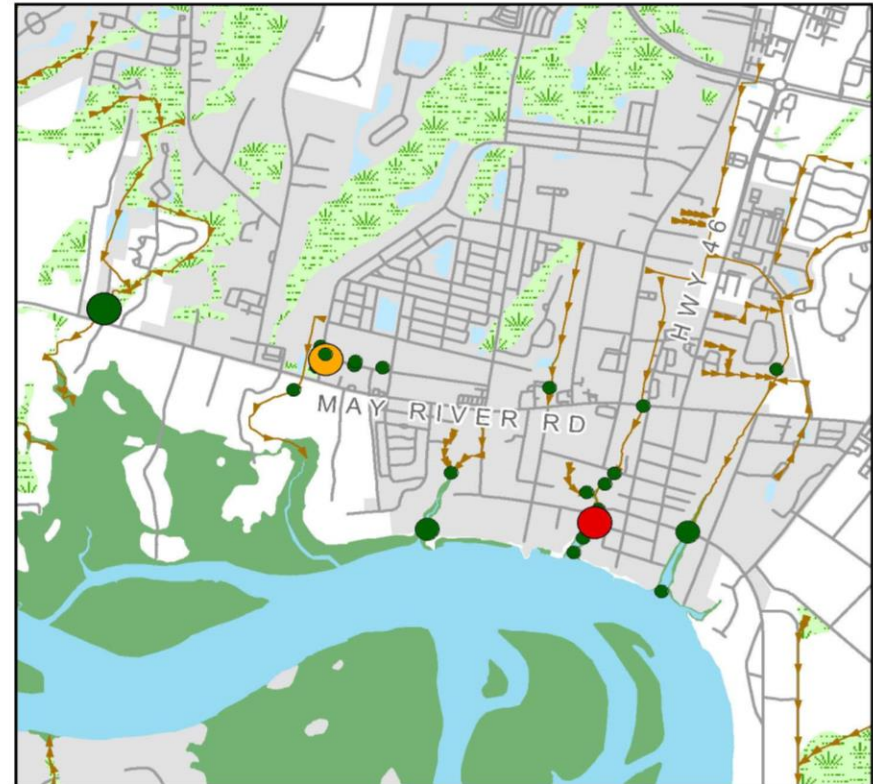


fecal_coliform_geomeans_workfile_12/18/17

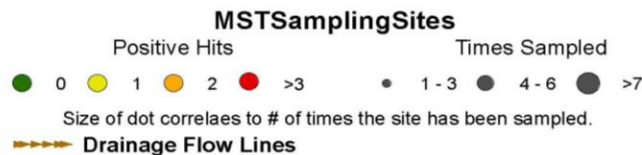
MS4 Minimum Control Measure #3 – IDDE: Microbial Source Tracking (MST) Trend Map



Microbial Source Tracking Trend Map
Headwaters May River



Microbial Source Tracking Trend Map
Old Town May River

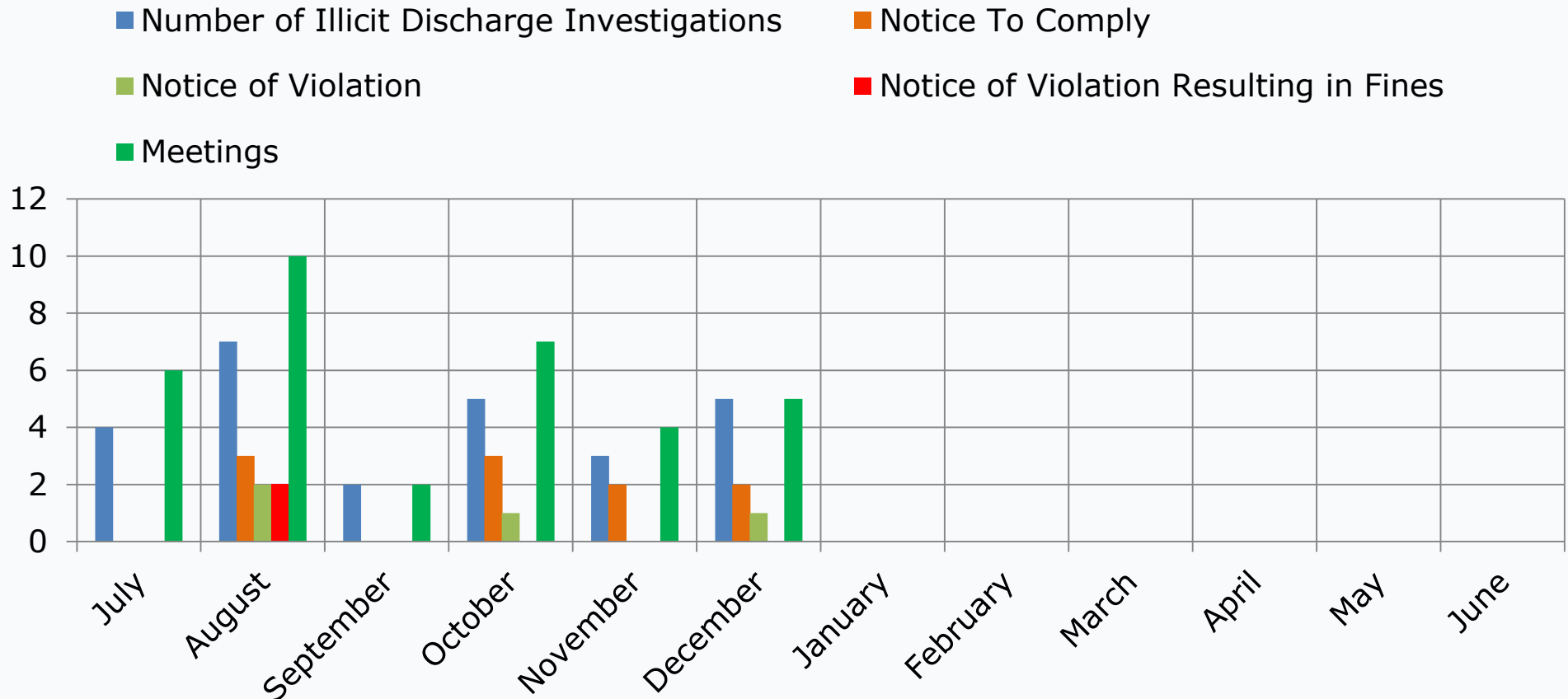


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Updated: 12/18/2017



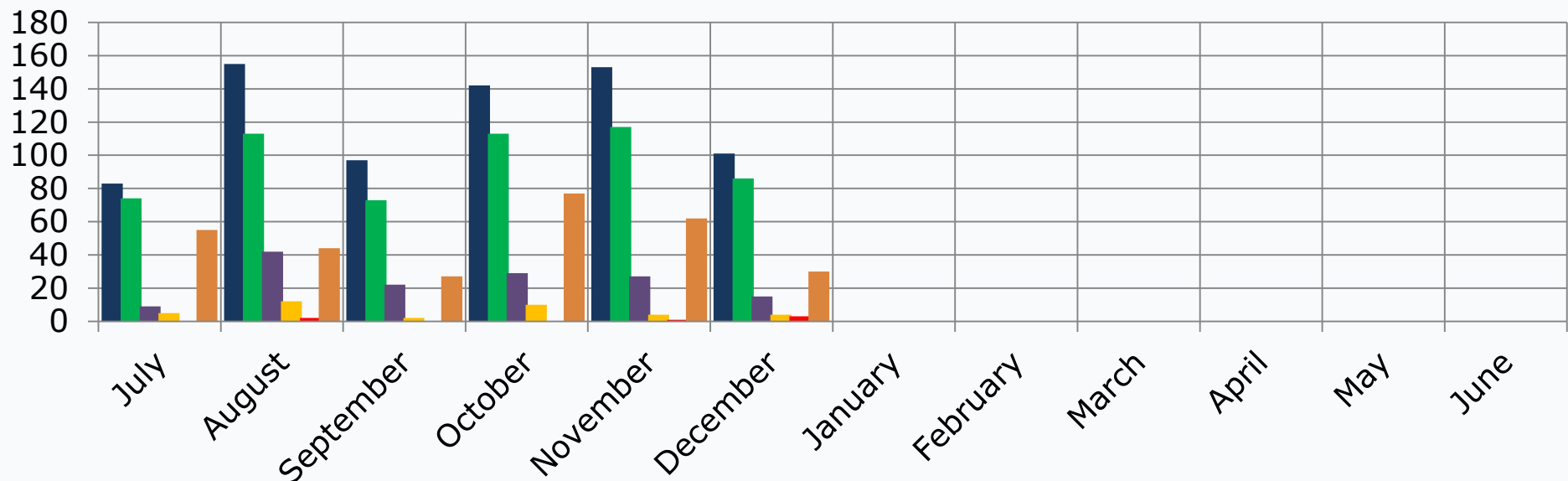
MS4 Minimum Control Measure #3 – IDDE: Illicit Discharge Investigations



	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	26	10	4	2	34
FY 2017 Totals	50	19	8	13	67

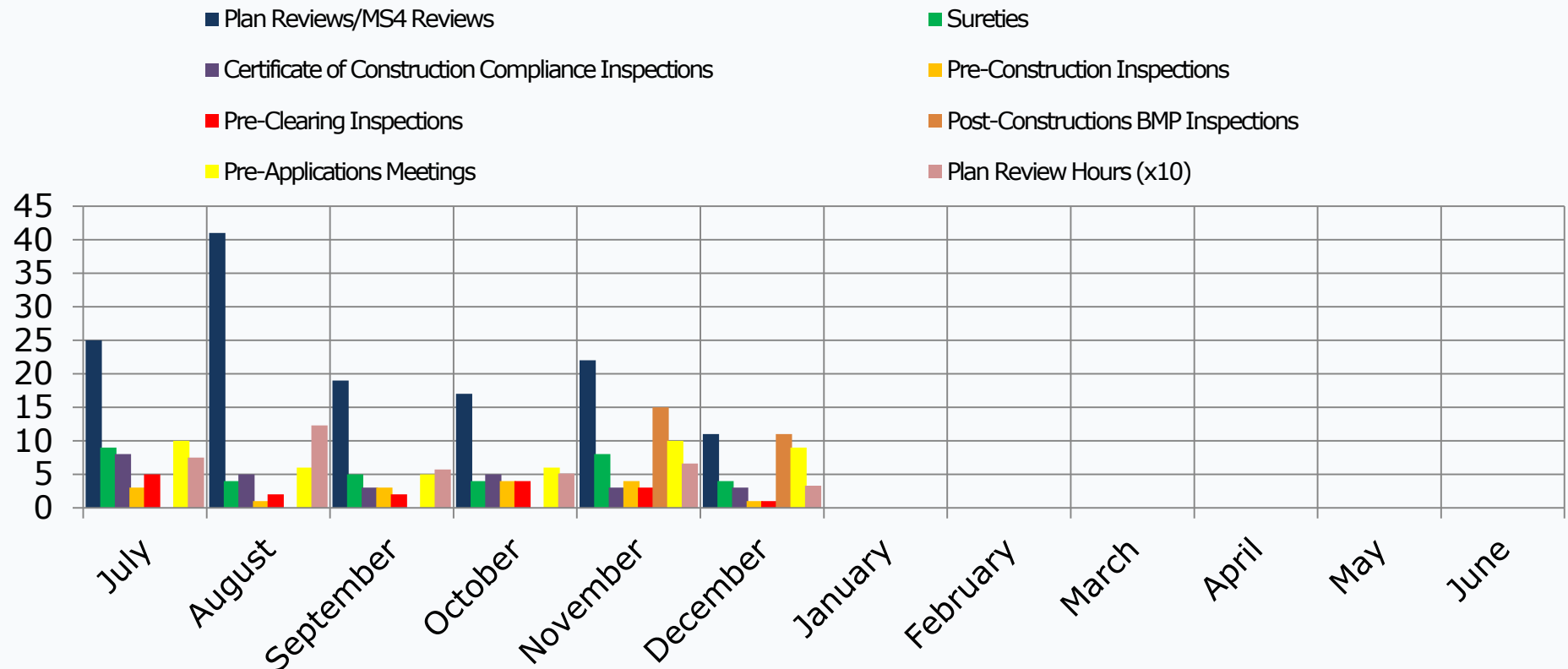
MS4 Minimum Control Measure #4 - Erosion and Sediment Control Inspections

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



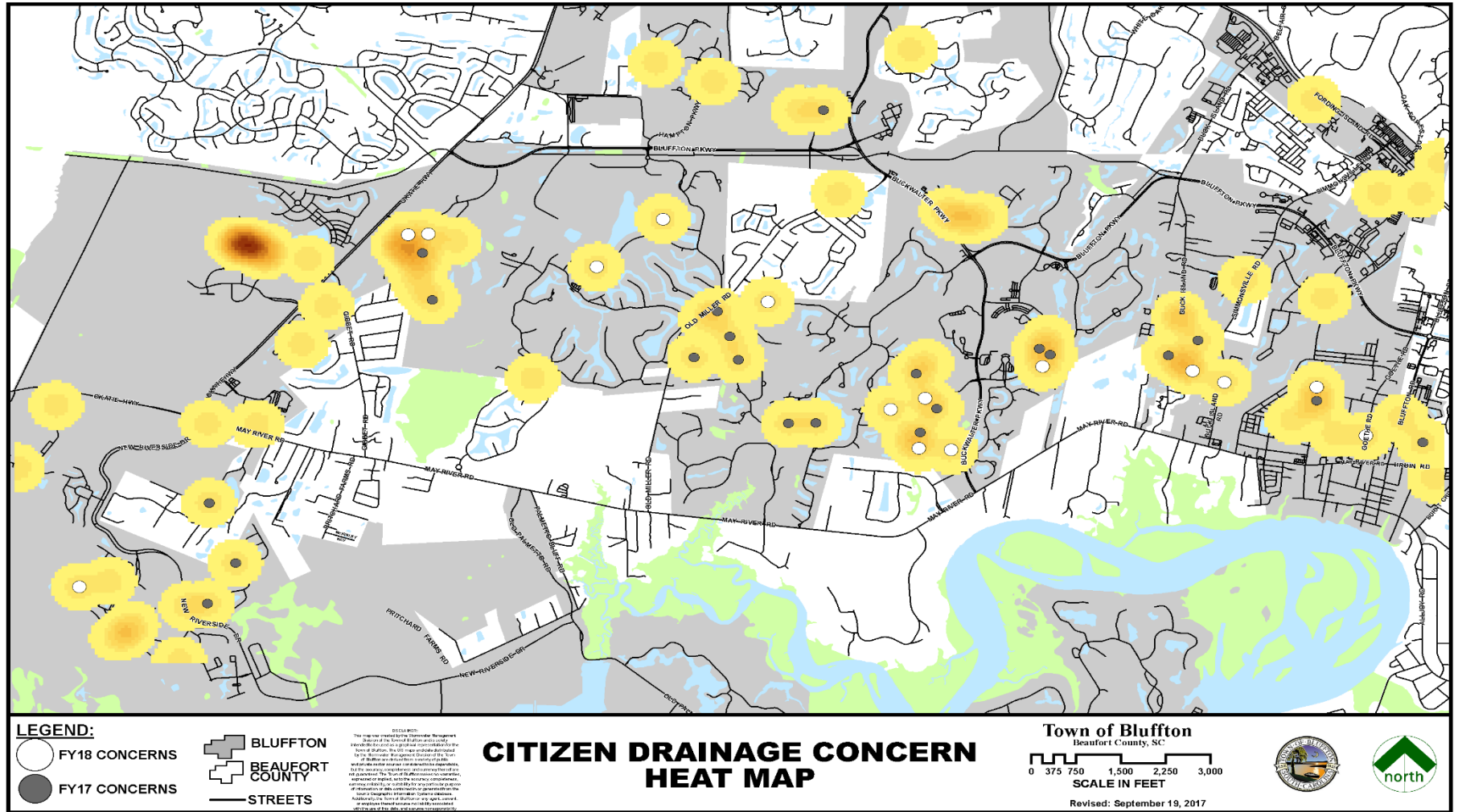
	Number of Sediment & Erosion Control Inspections	Number of Inspections Passed	Number of NTC Issued	Number of NOV's Issued	Number of NOV Enforcement Actions	Number of E&SC Meetings
FY 2018 YTD Totals	731	576	144	37	6	295
FY 2017 Totals	1,219	862	233	58	10	237

MS4 Minimum Control Measure #5 Stormwater Plan Review & Related Activity



	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	135	34	27	16	17	26	46	675 Hrs.
FY 2017 Totals	253	62	96	47	45	7	23	1,265 Hrs.

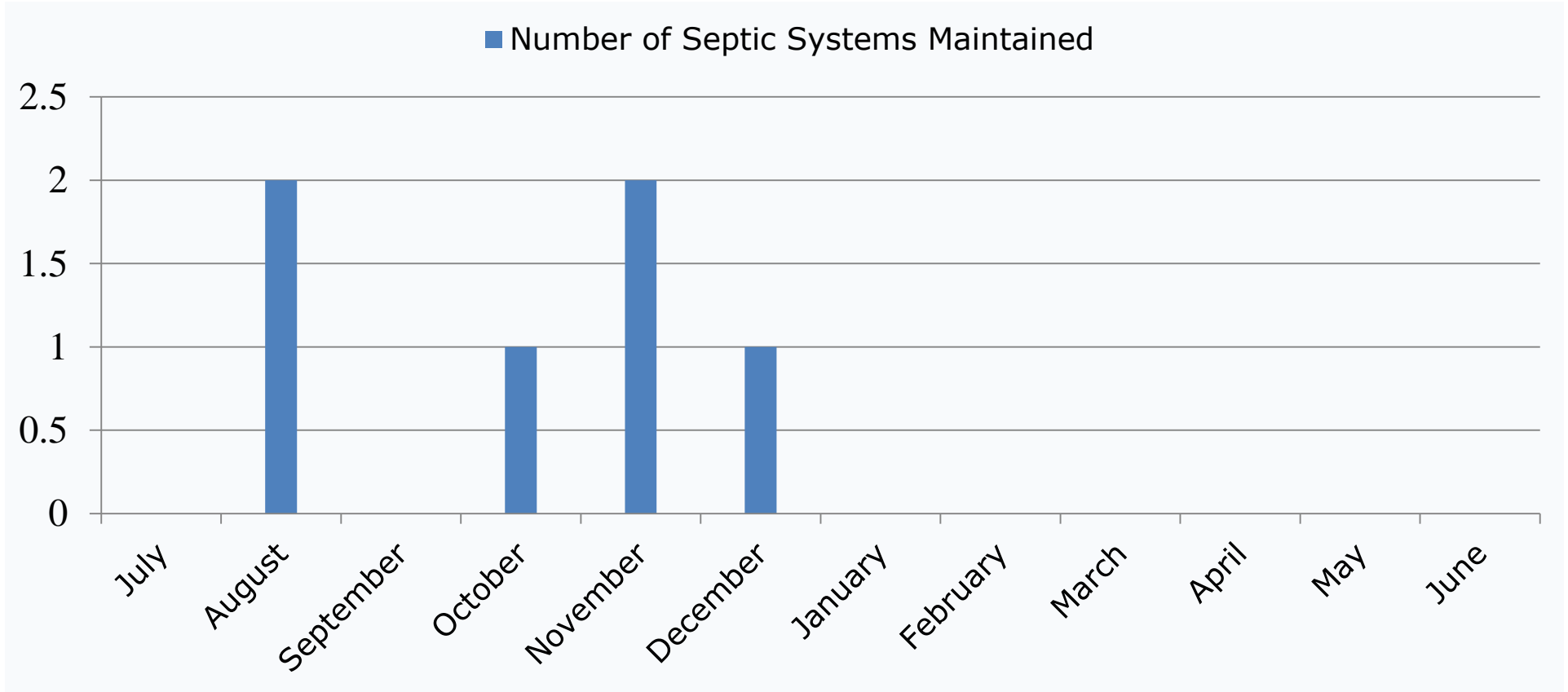
Citizen Drainage Concern Heat Map (Drainage, Maintenance and Inspections)



CITIZEN DRAINAGE CONCERN HEAT MAP

	Number of Drainage Concerns Investigated	Number of Meetings
FY 2018 YTD Totals	31	45
FY 2017 Totals	72	80

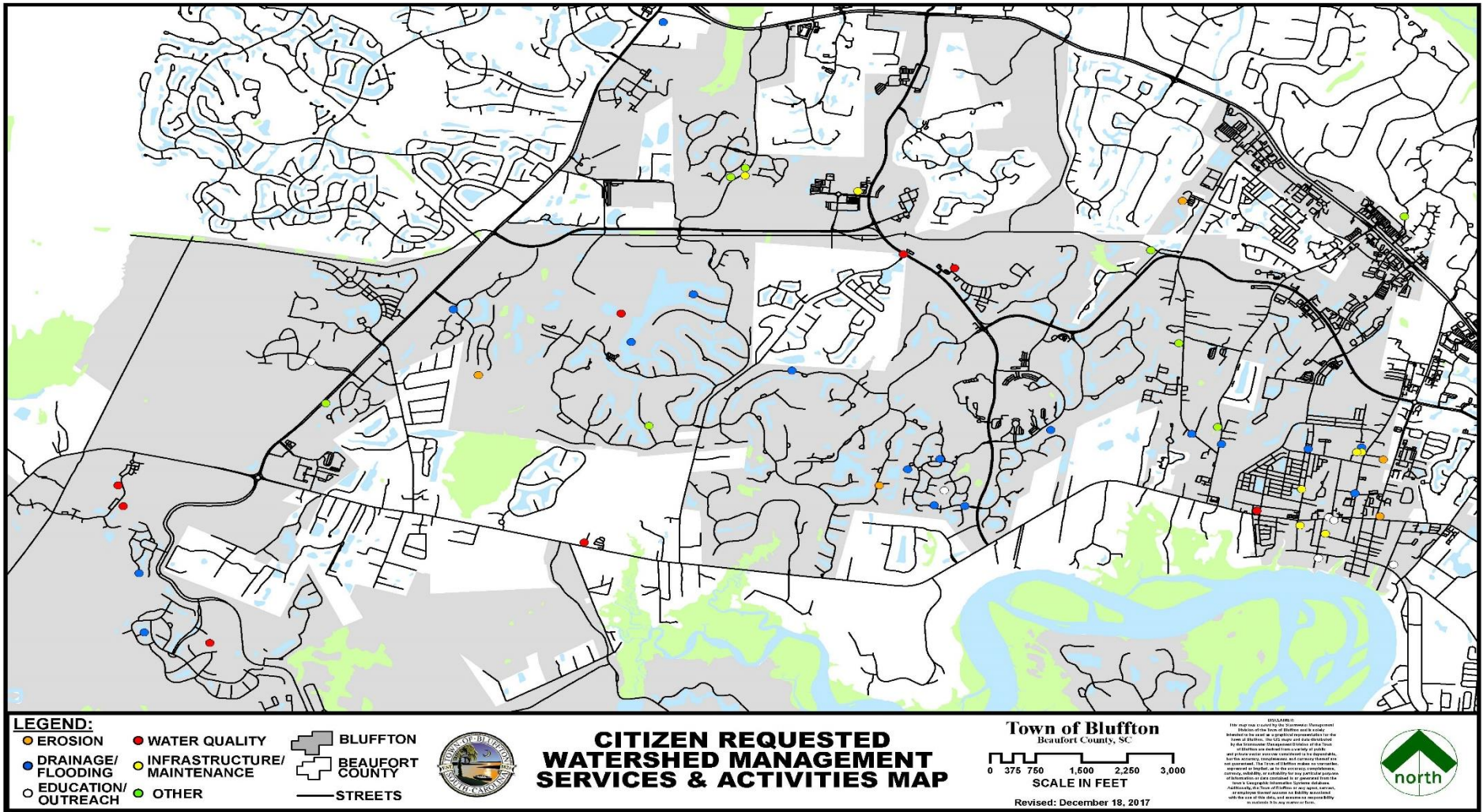
Septic System Maintenance Assistance



	Number of Septic Systems Maintained
FY 2018 YTD Totals	6
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 projects.

Citizen Request for Stormwater Services Heat Map



	Number of Citizen Requests Investigated	Number of Meetings
FY 2018 YTD Totals	45	52
FY 2017 Totals	53	82



MEMORANDUM

Date: January 10, 2018

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 seven minor projects. The Project Summary Reports are attached.

Major Projects – Storm Drainage System Improvements:

- **Eustis Landing Road – St Helena Island (SWUD 8):** This project improved 1,674 feet of drainage system. The scope of work included bush hogging 632 feet of channel, cleaning out 845 feet of roadside ditch and 829 feet of channel, replacing 1 driveway pipe, installing 1 driveway pipe and jetting 4 driveway pipes. The total cost was **\$19,688.55**.
- **Roseida Road – Port Royal Island (SWUD 6):** This project improved 1,017 feet of drainage system. The scope of work included bush hogging 772 feet of channel, installing 245 feet of channel pipe, rip rap and hydroseeding for erosion control. The total cost was **\$15,926.50**.

Minor or Routine Projects:

- **Dulamo Bluff – St Helena Island (SWUD 8):** This project improved 100 feet of drainage system. The project scope included replacing 100 feet of channel pipe, repairing a washout, installing rip rap and hydroseeding for erosion control. The total cost was **\$13,840.46**.
- **Archie Sumpter Road – Sheldon (SWUD 5):** This project improved 4,203 feet of drainage system. The scope of work included cleaning out 4,203 feet of channel and jetting 1 crossline pipe. The total cost was **\$11,912.70**.
- **White Sands Circle – St Helena Island (SWUD 8):** This project improved 3,337 feet of drainage system. The scope of work included cleaning out 3,337 feet of channel. The total cost was **\$6,275.54**.
- **Port Royal Island Bush Hog – Port Royal Island (SWUD 6):** This project improved 4,397 feet of drainage system. The scope of work included bush hogging 4,397 feet of workshelf. The total cost was **\$3,759.19**.
- **Sheldon Vacuum Truck – Sheldon (SWUD 5):** This project improved 44 feet drainage system. The scope of work included cleaning out 2 catch basins, jetting 7 crossline pipes, 33 driveway pipes and 28 feet of roadside pipe. The total cost was **\$3,739.93**.

- **Hilton Head Vacuum Truck – Hilton Head Island (SWUD 3):** This project improved 214 feet drainage system. The scope of work included cleaning out 1 manhole, 8 catch basins, jetting 4 crossline pipes, 32feet of channel pipe and 182 feet of roadside pipe. The total cost was **\$3,477.73**.
- **Gray Road – Sheldon (SWUD 5):** The scope of work included installing 4 access gates and removing spoil from the workshelf. The total cost was **\$3,290.12**.



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Eustis Landing Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 3/7/17 - 7/26/17

Project improved 1,674 L.F. of drainage system. Bush hogged 632 L.F. of channel. Cleaned out 845 L.F. of roadside ditch and 829 L.F. of channel. Replaced (1) driveway pipe. Installed (1) driveway pipe. Jetted (4) driveway pipes.

2017-538 / Eustis Landing Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	1.0	\$23.49	\$0.00	\$0.00	\$0.00	\$13.23	\$36.72
CBH / Channel- bushhogged	15.0	\$331.00	\$222.80	\$33.84	\$0.00	\$143.40	\$731.04
DPINS / Driveway Pipe - Installed	40.0	\$871.10	\$150.52	\$248.82	\$0.00	\$551.40	\$1,821.84
DPJT / Driveway Pipe - Jetted	10.0	\$222.80	\$43.40	\$24.90	\$0.00	\$143.40	\$434.50
DPR / Driveway Pipe - Repaired	6.0	\$137.31	\$30.43	\$12.60	\$0.00	\$89.10	\$269.44
HAUL / Hauling	112.0	\$2,491.22	\$1,055.04	\$1,835.54	\$0.00	\$1,379.86	\$6,761.66
RSDCL / Roadside Ditch - Cleanout	195.0	\$4,264.86	\$1,018.02	\$421.60	\$0.00	\$2,693.55	\$8,398.03
STAGING / Staging Materials/Equipment	15.0	\$336.25	\$18.00	\$7.20	\$0.00	\$214.65	\$576.10
UTLOC / Utility locates	0.5	\$12.35	\$0.00	\$0.00	\$0.00	\$6.62	\$18.97
WSDR / Workshelf - Dressed	15.0	\$336.25	\$75.26	\$9.00	\$0.00	\$219.75	\$640.26
2017-538 / Eustis Landing Road	409.5	\$9,026.63	\$2,613.47	\$2,593.49	\$0.00	\$5,454.95	\$19,688.55
Sub Total							
Grand Total	409.5	\$9,026.63	\$2,613.47	\$2,593.49	\$0.00	\$5,454.95	\$19,688.55

(Pictures Not Available)

Project: Eustis Landing Road Map#1

Activity: Routine/ Preventive Maintenance

Project #: 2017-538

Township/SW Dist: St Helena Island/8

Completed: July 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: 12/13/17

File: C:\project summaries map\Eustis Landing Road Map#1_2017-538



Project: Eustis Landing Road Map#2

Activity: Routine/ Preventive Maintenance

Project #: 2017-538

Township/SW Dist: St Helena Island/8

Completed: July 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: 12/13/17
 File: C:\project summaries map\Eustis Landing Road Map#2_2017-538



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Roseida Road

Activity: Drainage Improvement

Narrative Description of Project:

Project improved 1,017 L.F. of drainage system. Bush hogged 772 L.F. of channel. Installed 245 L.F. of channel pipe, rip rap and hydroseeded for erosion control.

Duration: 5/10/17 - 6/6/17

2017-008 / Roseida Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
BKFILL / Back Fill	50.0	\$1,145.40	\$171.66	\$17.62	\$0.00	\$677.60	\$2,012.28
CBH / Channel- bushhogged	12.0	\$269.28	\$104.04	\$8.65	\$0.00	\$164.36	\$546.33
CPI / Channel Pipe - Installation	100.0	\$2,223.30	\$557.50	\$1,437.52	\$0.00	\$1,220.80	\$5,439.12
HAUL / Hauling	53.0	\$1,192.65	\$499.26	\$1,466.48	\$0.00	\$727.08	\$3,885.47
HYDR / Hydroseeding	4.0	\$81.84	\$32.08	\$231.79	\$0.00	\$26.46	\$372.17
UTLOC / Utility locates	1.0	\$24.70	\$0.00	\$0.00	\$0.00	\$13.23	\$37.93
WSL / Workshelf - Level	90.0	\$2,080.20	\$251.68	\$60.07	\$0.00	\$1,222.90	\$3,614.85
2017-008 / Roseida Road Sub Total	310.5	\$7,029.12	\$1,616.22	\$3,222.12	\$0.00	\$4,059.05	\$15,926.50
Grand Total	310.5	\$7,029.12	\$1,616.22	\$3,222.12	\$0.00	\$4,059.05	\$15,926.50

Before



During



After



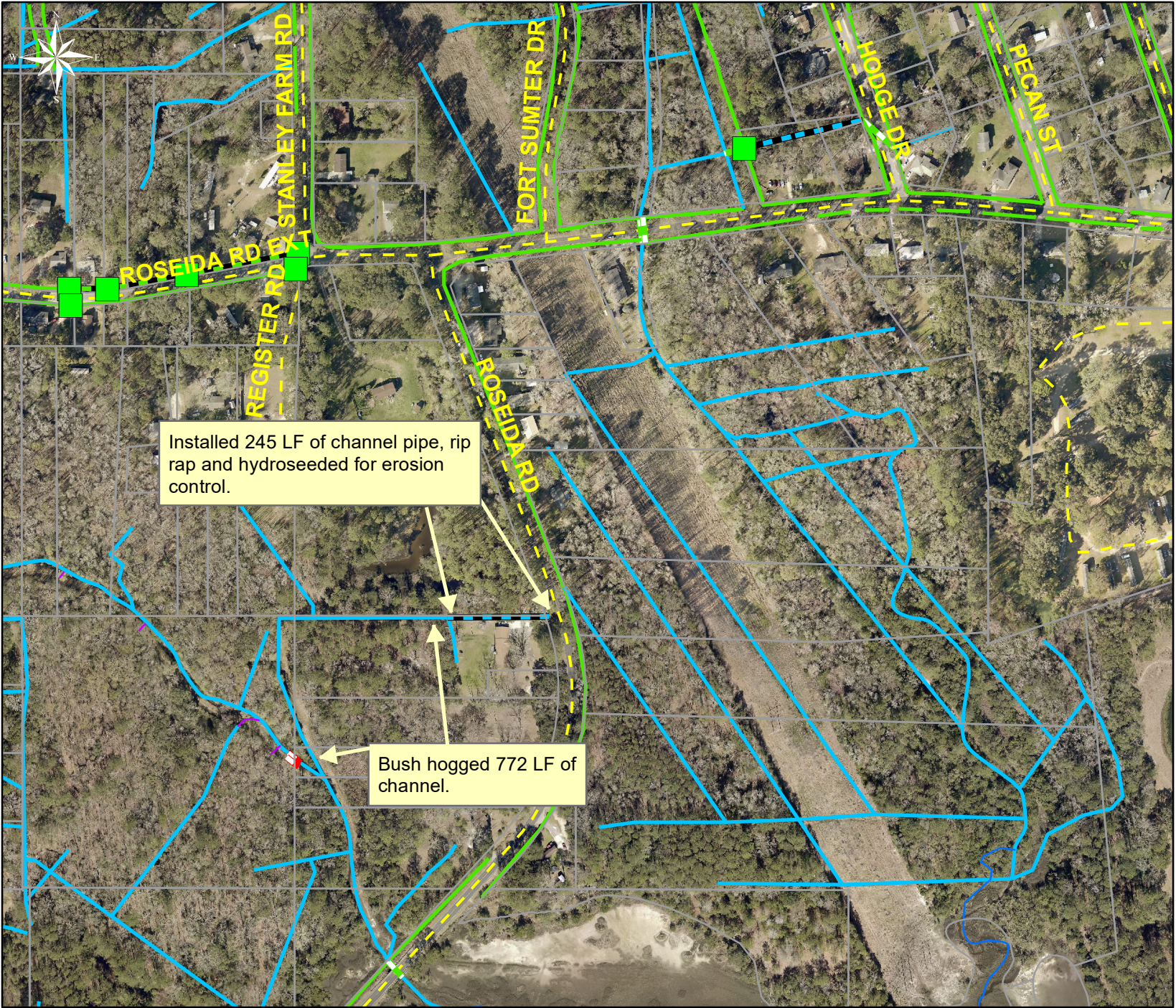
Project: Roseida Road

Activity: Drainage Improvement

Project #: 2017-008

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 = 330 feet



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Dulamo Bluff

Activity: Drainage Improvement

Narrative Description of Project:

Project improved 100 L.F. drainage system. Replaced 100 L.F. of channel pipe. Repaired washout. Installed rip rap and handseeded for erosion control.

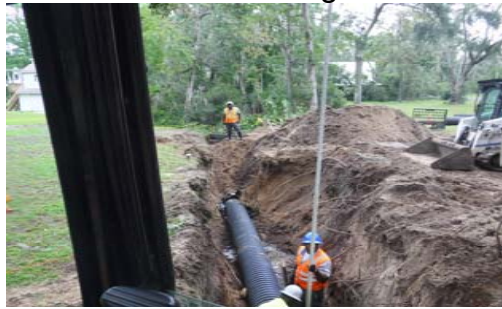
Duration: 8/29/17 - 9/25/17

2018-516 / Dulamo Bluff	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CPI / Channel Pipe - Installation	46.0	\$1,058.72	\$159.85	\$407.94	\$0.00	\$661.68	\$2,288.19
HAUL / Hauling	71.0	\$1,560.88	\$621.72	\$2,820.09	\$0.00	\$865.20	\$5,867.89
LM / Loading Materials	50.0	\$1,106.70	\$326.62	\$659.44	\$0.00	\$685.80	\$2,778.56
RPWO / Repaired Washout	15.0	\$303.90	\$46.63	\$29.43	\$0.00	\$188.25	\$568.21
RRR / Rip Rap - Installed	50.0	\$1,094.70	\$222.04	\$307.94	\$0.00	\$675.60	\$2,300.27
UTLOC / Utility locates	0.5	\$12.35	\$0.00	\$0.00	\$0.00	\$6.62	\$18.97
2018-516 / Dulamo Bluff	233.0	\$5,149.00	\$1,376.86	\$4,224.85	\$0.00	\$3,089.76	\$13,840.46
Sub Total							
Grand Total	233.0	\$5,149.00	\$1,376.86	\$4,224.85	\$0.00	\$3,089.76	\$13,840.46

Before

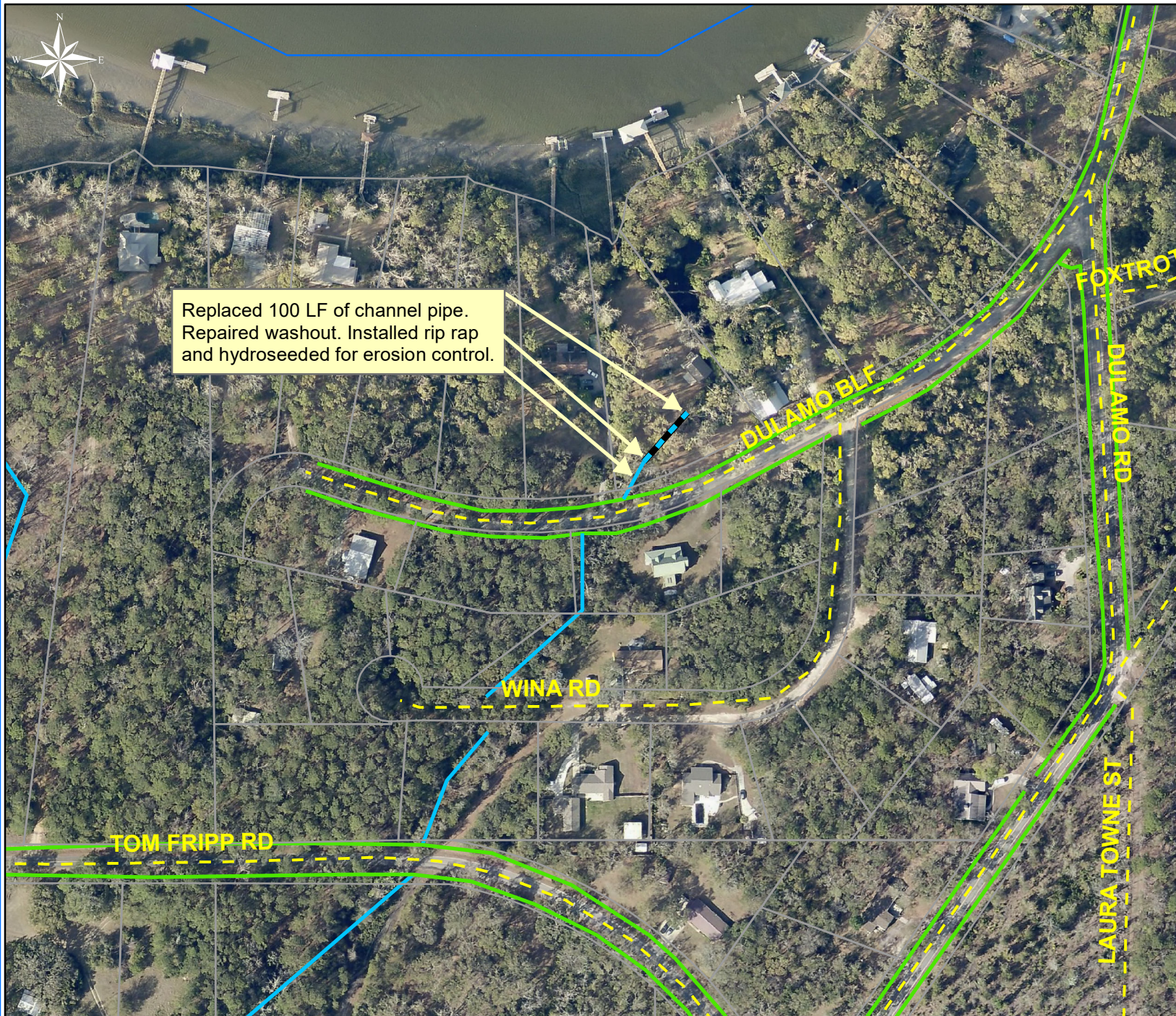


During



After





Project: Dulamo Bluff

Activity: Drainage Improvement














Project #: 2018-516

Township/SW Dist: St Helena Island/8

Completed: September 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



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Archie Sumpter Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 4,203 L.F. of drainage system. Cleaned out 4,203 L.F. of channel. Jetted (1) crossline pipe.

Duration: 7/5/17 - 7/17/17

2018-502 / Archie Sumpter Drive	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CBH / Channel- bushhogged	40.0	\$842.70	\$520.95	\$90.75	\$0.00	\$532.60	\$1,987.00
CCO / Channel - cleaned out	146.0	\$3,485.74	\$1,935.85	\$556.02	\$0.00	\$2,008.65	\$7,986.26
CLPJT / Crossline Pipe - Jetted	4.0	\$92.04	\$17.36	\$25.40	\$0.00	\$59.82	\$194.62
HAUL / Hauling	35.5	\$801.75	\$285.09	\$167.01	\$0.00	\$472.61	\$1,726.46
2018-502 / Archie Sumpter Road	226.0	\$5,233.97	\$2,759.25	\$839.18	\$0.00	\$3,080.30	\$11,912.70
Sub Total							
 Grand Total	226.0	\$5,233.97	\$2,759.25	\$839.18	\$0.00	\$3,080.30	\$11,912.70

Before



During



After



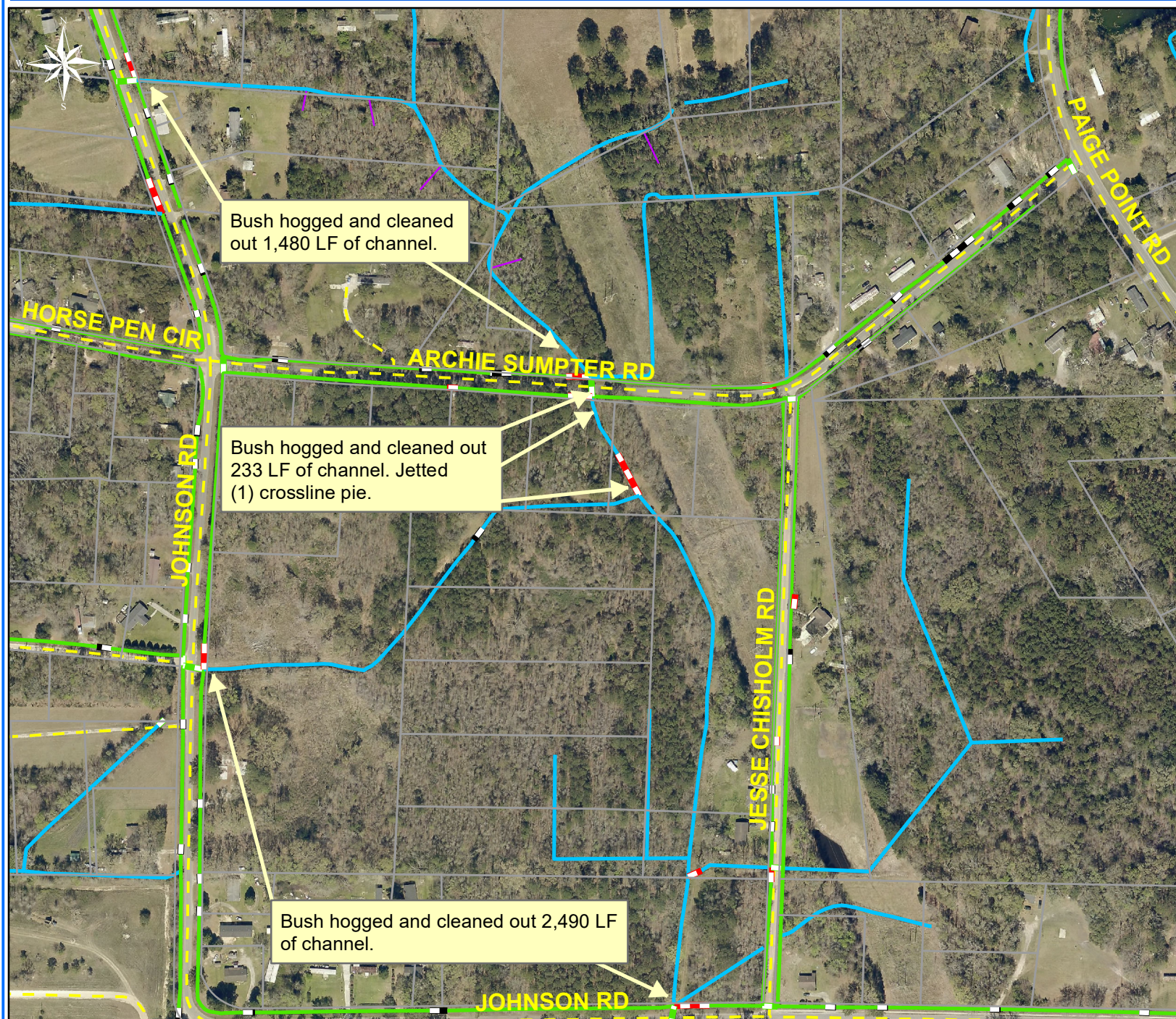
Project: Archie Sumpter Road

Activity: Routine/
Preventive
Maintenance

Project #:
2018-502














Township/SW Dist:
Sheldon/5

Completed:
July 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: 12/12/17

File: C:\project summaries map\Archie Sumpter Drive_2017-502



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: White Sands Circle Channel #1

Activity: Routine/Preventive Maintenance

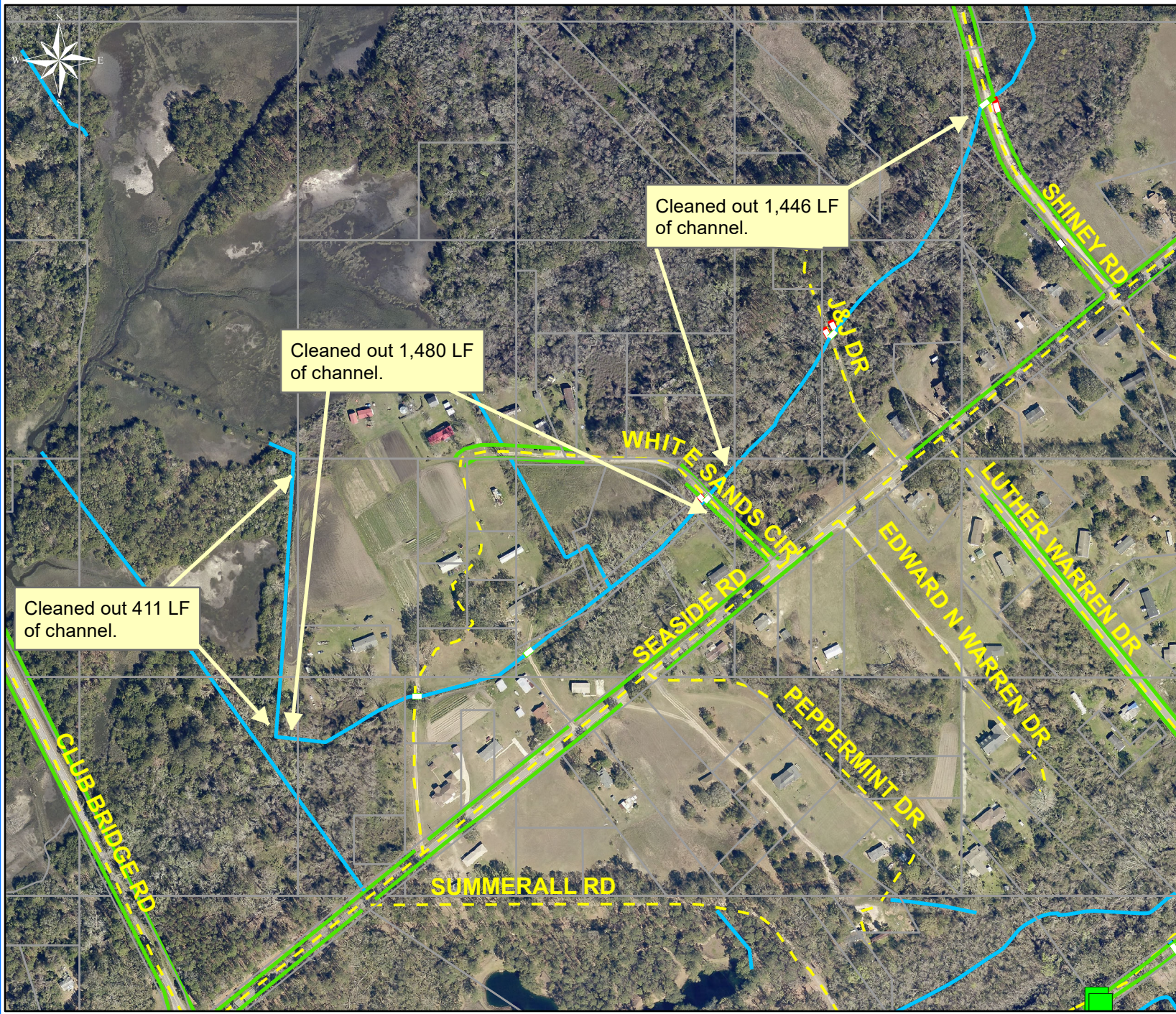
Narrative Description of Project:

Project improved 3,337 L.F. of drainage system. Cleaned out 3,337 L.F. of channel.

Duration: 7/5/17 - 7/11/17

2018-500 / White Sands Circle Ch #1	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	132.0	\$2,892.28	\$508.35	\$85.32	\$0.00	\$1,724.44	\$5,210.39
HAUL / Hauling	27.0	\$547.47	\$254.34	\$115.20	\$0.00	\$129.78	\$1,046.79
2018-500 / White Sands Circle Ch #1	159.5	\$3,451.50	\$762.69	\$200.52	\$0.00	\$1,860.84	\$6,275.54
Sub Total							
Grand Total	159.5	\$3,451.50	\$762.69	\$200.52	\$0.00	\$1,860.84	\$6,275.54

(Pictures Not Available)



Project: White Sands Circle Channel #1

Activity: Routine/ Preventive Maintenance

Project #: 2018-500

Township/SW Dist: St. Helena Island/8

Completed: July 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



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Port Royal Island Bush Hog

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 7/14/16 - 5/17/17

Project improved 4,397 L.F. of drainage system. Bush hogged 4,397 L.F. of workshelf. This project consisted of the following areas: Huron Drive (1,412 L.F.), Salem Drive (930 L.F.), Mink Point (1,480 L.F.), Forest Field Road (150 L.F.), Colonial Heights (45 L.F.) and Irongate Drive (380 L.F.)

2017-301 / Port Royal Island Bush Hog	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
WSBH / Workshelf - Bush Hogged	92.0	\$1,965.00	\$382.40	\$156.37	\$0.00	\$1,237.06	\$3,740.83
2017-301 / Port Royal Island Bush Hog	92.5	\$1,976.75	\$382.40	\$156.37	\$0.00	\$1,243.67	\$3,759.19
Sub Total							
Grand Total	92.5	\$1,976.75	\$382.40	\$156.37	\$0.00	\$1,243.67	\$3,759.19

Before



During



After





Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Sheldon Vacuum Truck - Paige Point Bluff, Albertha Fields Circle, Bransford Circle, Twickenham Road and Prescott Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 44 L.F. of drainage system. Cleaned out (2) catch basins. Jetted (7) crossline pipes, (33) driveway pipes and 28 L.F. roadside pipe.

Duration: 1/25/17 - 5/16/17

2017-308A / Sheldon Vacuum Truck	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CBCO / Catch basin - clean out	12.0	\$267.36	\$52.08	\$38.35	\$0.00	\$172.08	\$529.87
CLPJT / Crossline Pipe - Jetted	30.0	\$692.60	\$173.60	\$141.40	\$0.00	\$451.50	\$1,459.10
DPJT / Driveway Pipe - Jetted	40.0	\$891.20	\$173.60	\$94.20	\$0.00	\$573.60	\$1,732.60
2017-308A / Sheldon Vacuum Truck Sub Total	82.5	\$1,862.91	\$399.28	\$273.95	\$0.00	\$1,203.79	\$3,739.93
Grand Total	82.5	\$1,862.91	\$399.28	\$273.95	\$0.00	\$1,203.79	\$3,739.93

Before



During



After





Project: Sheldon Vacuum Truck-Paige Point Bluff Map #1

Activity: Routine/ Preventive Maintenance

Project #: 2017-308A

Township/SW Dist: Sheldon/5

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 = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print: 11/01/17

File: C:\project summaries map\Sheldon Vac Truck-Paige Point Bluff Map#1_2017-308A



Project: Sheldon
Vacuum Truck-
Albertha Fields
Circle
Map #2

Activity: Routine/
Preventive
Maintenance

Project #:
2017-308A

Township/SW Dist:
Sheldon/5

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 (3) driveway pipes.

Jetted (3) driveway pipes.



1 inch = 210 feet

Prepared By: BC Stormwater Management Utility

Date Print: 11/01/17

File: C:\project summaries map\Sheldon Vac Truck-Albertha Fields Circle Map#2_2017-308A



Project: Sheldon Vacuum Truck-Brandford Circle Map #3

Activity: Routine/ Preventive Maintenance

Project #: 2017-308A

Township/SW Dist: Sheldon/5

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 = 330 feet

Prepared By: BC Stormwater Management Utility
Date Print: 11/01/17

File: C:\project summaries map\Sheldon Vac Truck-Branford Circle Map#3_2017-308A



Project: Sheldon Vacuum Truck - Twickenham Road Map# 4

Activity: Routine/ Preventive Maintenance

Project #: 2017-308A

Township/SW Dist: Sheldon/7

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 = 330 feet

Prepared By: BC Stormwater Management Utility

Date Print: 11/01/17

File: C:\project summaries map\Sheldon Vacuum Truck- Twickenham Road Map#4_2017-308A



Project: Sheldon Vacuum Truck- Prescott Road Map #5

Activity: Routine/ Preventive Maintenance

Project #: 2017-308A

Township/SW Dist: Sheldon/5

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

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

Jetted (1) driveway pipe.



1 inch = 210 feet

Prepared By: BC Stormwater Management Utility
Date Print: 11/01/17

File: C:\project summaries map\Sheldon Vac Truck- Prescott Road Map#5_2017-308A



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Hilton Head Vacuum Truck - Gibson Drive, Namon Road and Oakview Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 214 L.F. of drainage system. Cleaned out (1) manhole and (8) catch basins. Jetted (4) crossline pipes, 32 L.F. of channel pipe and 182 L.F. of roadside pipe.

Duration: 2/1/17 - 2/6/17

2017-311A / Hilton Head Vac Truck	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CBCO / Catch basin - clean out	76.0	\$1,693.28	\$329.84	\$346.41	\$0.00	\$1,089.84	\$3,459.37
2017-311A / Hilton Head Vac Truck	76.5	\$1,705.03	\$329.84	\$346.41	\$0.00	\$1,096.46	\$3,477.73
Sub Total							
Grand Total	76.5	\$1,705.03	\$329.84	\$346.41	\$0.00	\$1,096.46	\$3,477.73

Before

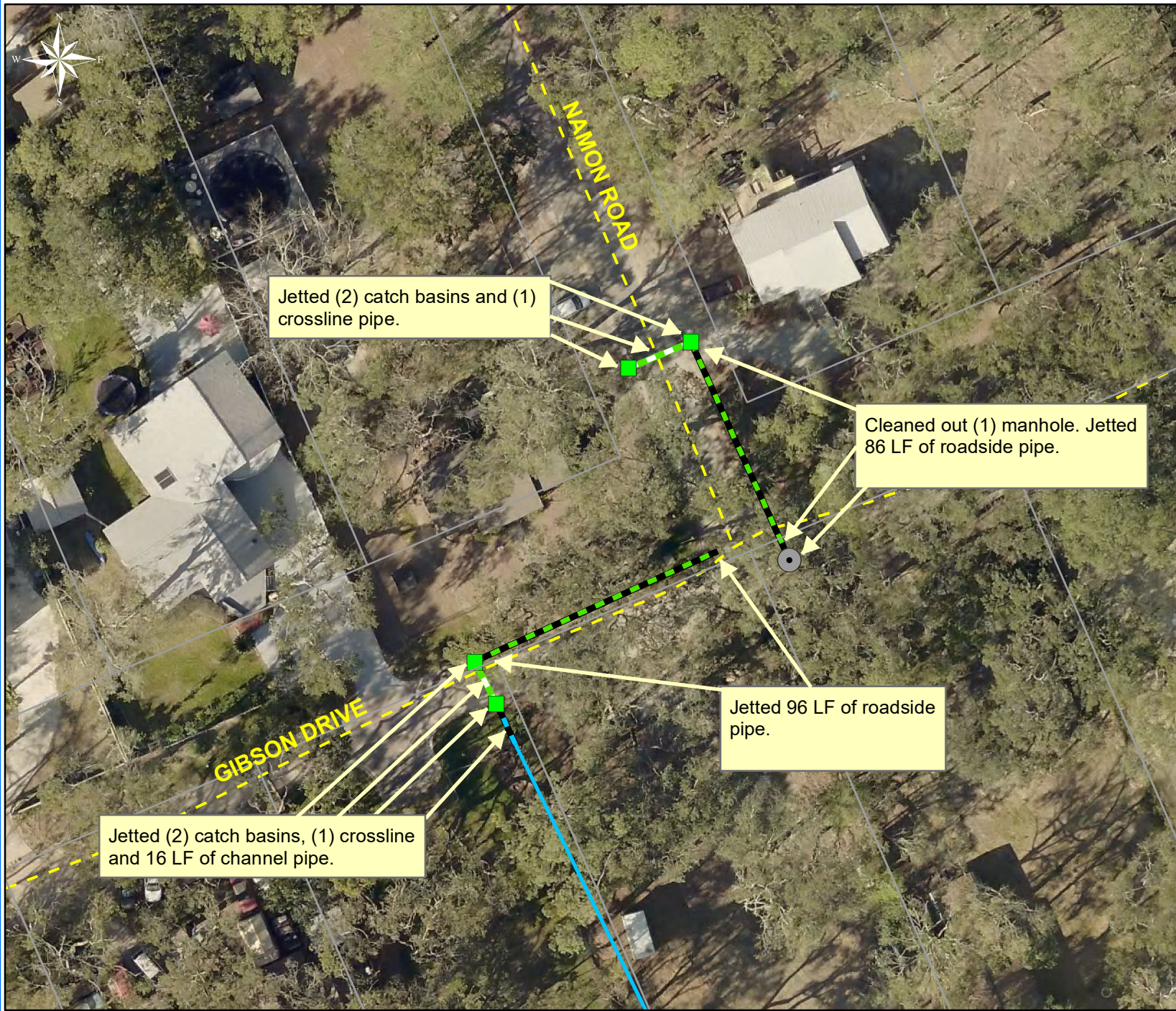


During



After





Project: Hilton Head
Vacuum Truck-
Gibson Drive &
Namon Road

Activity: Routine/
Preventive
Maintenance

Project #:
2017-311A

Township/SW Dist:
Hilton Head Island/
3

Completed:
February 2017

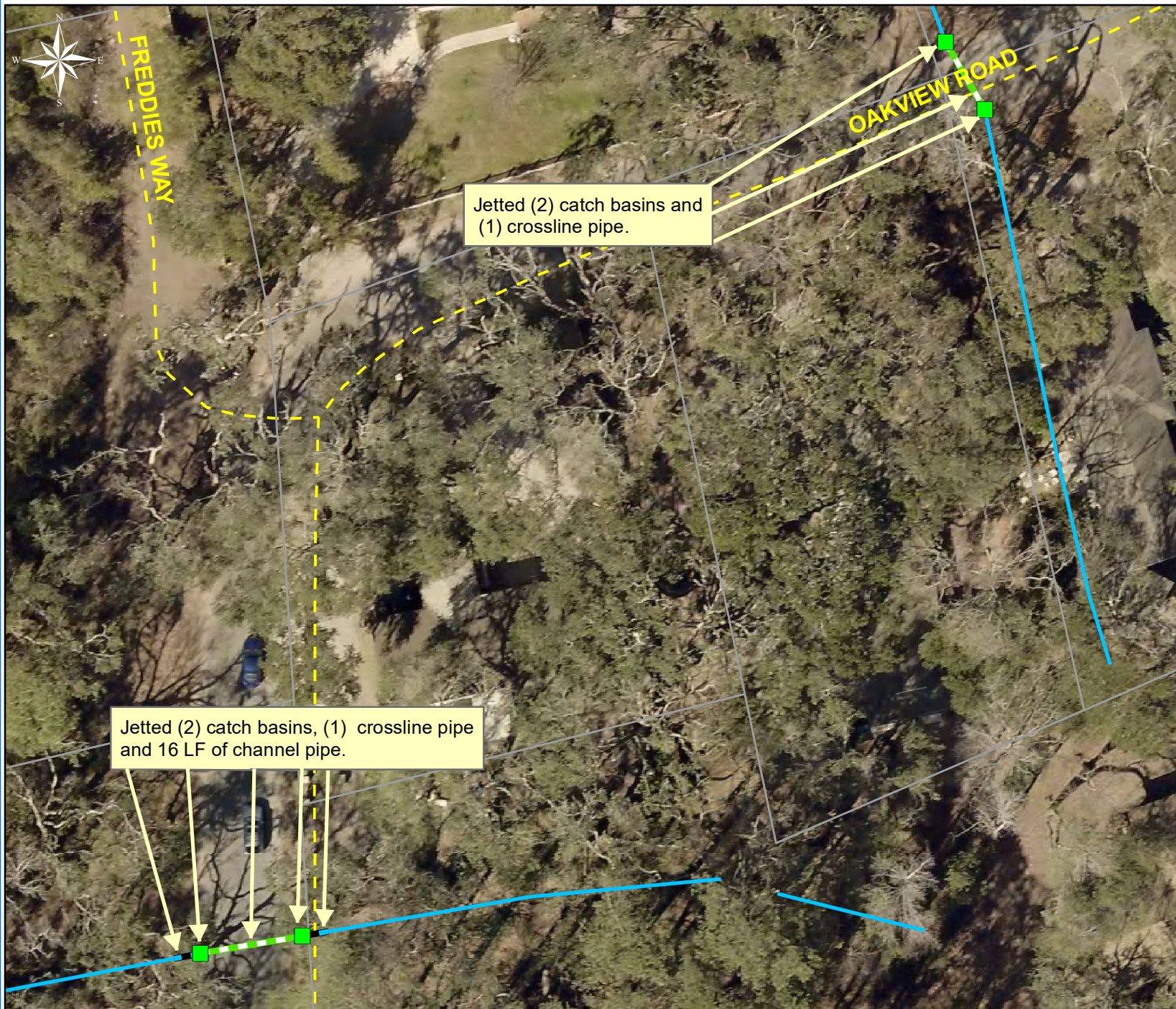
Legend	
Drainage Type	
	Access Pipe
	Bleeder Pipe
	Channel Pipe
	Channel
	Stream
	Crossline Pipe
	Driveway Pipe
	Lateral
	Lateral Pipe
	River
	Road Pipe
	Roadside
	Roadside Pipe



1 inch = 50 feet

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

File: C:\project summaries map\Hilton Head Island Gibson Drive & Namon Road_2017-311A



Project: Hilton Head
Vacuum Truck-
Oakview Road

Activity: Routine/
Preventive
Maintenance

Project #:
2017-311A

Township/SW Dist:
Hilton Head Island/
3

Completed:
February 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 = 43 feet



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Gray Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Duration: 5/25/17 - 5/30/17

Installed (4) access gates. Removed spoil from workshelf.

2017-565 / Gray Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AGI / Access Gate - Installed	45.0	\$1,008.50	\$150.64	\$657.27	\$0.00	\$649.90	\$2,466.31
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
HAUL / Hauling	20.0	\$415.50	\$188.40	\$57.35	\$0.00	\$144.20	\$805.45
2017-565 / Gray Road Sub Total	65.5	\$1,435.75	\$339.04	\$714.62	\$0.00	\$800.71	\$3,290.12
Grand Total	65.5	\$1,435.75	\$339.04	\$714.62	\$0.00	\$800.71	\$3,290.12

(Pictures Not Available)

Project: Gray Road

Activity: Routine/
Preventive
Maintenance

Project #:
2017-565














Township/SW Dist:
Sheldon/5

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: 12/13/17

File: C:\project summaries map\Gray Road_2017-565

ORD. 2016-201 / 38 , 10 -24 -2016201

AN ORDINANCE TO AMEND THE STORMWATER MANAGEMENT UTILITY ORDINANCE 2016/26
38 AS ADOPTED SEPTEMBER 26/OCTOBER 24, 2016 TO PROVIDE FOR THE ADDITION OF
ARTICLES III, IV, V, AND VI RELATED TO ADOPTION OF STORMWATER MANAGEMENT
STANDARDS TO MEET MUNICIPAL SEPARATE STORMSEWER SYSTEM (MS4) PERMIT
REQUIREMENTS THE DEFINITION OF "DEVELOPMENT" AND EXEMPTIONS RELATED TO
COUNTY DIRT ROAD PAVING

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

WHEREAS, Chapter 99, Article II, "Stormwater Management Utility" was adopted on August 27, 2001 and was modified by Ordinance on August 22, 2005, September 28, 2015, and September 26, 2016, and October 24, 2016; and

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

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

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

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

WHEREAS, pursuant to the requirements mandated by the Municipal Separate Stormsewer System (MS4) permit issued by the South Carolina Department of Health and Environmental Control (DHEC) on December 1, 2015, Beaufort County is required to adopt standards related to stormwater management and create a regulatory framework to enforce the same; and

WHEREAS, the Beaufort County Stormwater Utility Board has amended the Manual for Stormwater Best Management and Design Practices (BMP Manual) as the source of the technical stormwater standards used in the development of Stormwater Plans and adopted the same on September 14, 2016; and

WHEREAS, the Stormwater Utility Board has determined that limited road improvement functions, specifically dirt road paving, should not be subject to certain stormwater requirements typically required for development; and,

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

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

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

Chapter 99 - STORMWATER MANAGEMENT

ARTICLE I. - IN GENERAL

Secs. 99-1—99-100. - Reserved.

ARTICLE II. - STORMWATER MANAGEMENT UTILITY

Sec. 99-106. - Definitions.

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

Developed land. Developed land shall mean property altered from its natural state by construction or installation of improvements such as buildings, structures, or other impervious surfaces, or by other alteration of the property that results in a meaningful change in the hydrology of the property during and following rainfall events. Existing County maintained dirt roads which are improved and or paved as part of Beaufort County's Dirt Road Paving Program as set forth in Beaufort County Policy Statement 15 and Policy Statement 17 and existing private dirt roads with adequate existing Stormwater conveyance systems which are improved or paved and where the project is not related to a pending or proposed development of adjacent land are deemed not to constitute "developed land".

Article III. – REGULATORY GENERAL PROVISIONS

Sec. 99-203. - Definitions

The following definitions shall apply in Articles III, IV, V, and VI this Ordinance. Any term not herein defined shall be given the definition, if any, as is found elsewhere in the Code of Ordinances of Beaufort County, including the Community Development Code (CDC) Ordinance.

Development. All project construction, modification, or use of any lot, parcel, building, or structure on land and on water. Existing dirt roads which are improved and or paved as part of Beaufort County's Dirt Road Paving Program as set forth in Beaufort County Policy Statement 15 and Policy Statement 17 and existing private dirt roads with adequate existing Stormwater conveyance systems which are improved or paved and where the project is not related to a pending or proposed development of adjacent land are deemed not to constitute "development".

Section 2

Stormwater Design Criteria

2.1 General Planning and Design Requirements

2.1.1 General Standards

General planning and design requirements for stormwater management are as follows:

1. All development that creates runoff and/or discharge may adversely impact water quality in county streams, lakes and tidal waterbodies. Therefore, all proposed development and redevelopment shall be required to submit a Drainage Plan to show compliance with the peak attenuation, water quality, volume and construction pollution control requirements in this manual, with the following exceptions:
 - a. Total disturbed area is under 5,000 square feet (sq ft). Disturbed area shall include all areas utilized for construction, access, and storage of materials that are disturbed.
 - b. Any maintenance, alteration, renewal use or improvement to an existing drainage structure as approved by the stormwater manager that does not create adverse environmental or water quality impacts and does not increase the temperature, rate, quality, volume or location of stormwater runoff discharge.
 - c. Site work on existing developed sites 1-acre or less, where impervious area is increased by less than 5,000 sq ft, and earthwork does not increase runoff and/or eliminate detention/retention facilities and/or stormwater storage or alter stormwater flow rates or discharge location(s).
 - d. Agricultural activity not involving relocation of drainage canals.
 - e. Work by agencies or property owners required to mitigate emergency flooding conditions. If possible, emergency work should be approved by the duly appointed officials in charge of emergency preparedness or emergency relief. Property owners performing emergency work will be responsible for any damage or injury to persons or property caused by their unauthorized actions. Property owners will restore the site of the emergency work to its approximate pre-emergency condition within a period of 60 days following the end of the emergency period.
 - f. Golf courses are required to comply with all site runoff volume and water quality control and drainage planning and design requirements. However, both

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golf courses and private lagoons shall be exempt from the peak attenuation requirements.

g. The paving of dirt roads are deemed not to constitute "development" and shall be exempt from the standards of the County Code of Ordinance Chapter 99 (Stormwater Utility Ordinance), MS4 Program or this BMP Manual if the action meets one of the following conditions:

1. Existing County maintained dirt roads which are improved and/or paved as part of Beaufort County's Dirt Road Paving Program as set forth in Beaufort County Policy Statement 15 and Policy Statement 17;

2. Private dirt roads with adequate existing Stormwater conveyance systems where the project is not related to a pending or proposed development of adjacent land, and the proposed paving meets the Thoroughfare Construction Specifications in Section 2.9.80 of the Community Development Code. Private dirt roads without adequate existing Stormwater conveyance systems will be required to construct a conveyance system per this BMP Manual but will not be required to provide Water Quality Control, Volume Control, or Retention / Detention Facilities.

3-2 Compliance with this section shall be demonstrated by the submission of detailed plans and calculations showing compliance through the use of BMPs provided within this manual. Detailed hydraulic and hydrologic calculations will be provided in a written report showing methodology and inputs for required calculations. All calculations and plans must be signed and sealed by a qualified professional registered under the South Carolina Division of Professional and Occupational Licensing.

4-3 Priority wetlands or other significant wetlands identified on the official County conservation district maps, or the Federal National Wetlands Inventory should not be adversely impacted by the construction of BMP facilities in or near them, which deprives them of required runoff or lowers their normal water table elevations. Adjacent BMPs that benefit retention of normal wetland water table elevations are acceptable. If the BMP's proposed location is near a priority wetland, the applicant must provide data showing that impacts will not be detrimental to the wetland hydrology.

5-4 Measures used to collect and convey stormwater on any site ("stormwater management facilities") shall be designed to meet the following minimum performance standards:

- a. Prevent erosion damage and satisfactorily carry off or detain and control the rate of release of surface waters.
- b. Carry surface water to the nearest adequate street, storm drain, detention basin, natural watercourse, or drainage facility.
- c. Control/accommodate not only the anticipated peak discharge from the onsite disturbed area but also the existing runoff being contributed from all land at a higher elevation in the same watershed.

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- d. No stormwater runoff or natural drainage shall be so diverted as to overload existing drainage systems or create flooding or the need for additional drainage structures on other private properties or public lands. Please see Appendix G regarding the Common Enemy Law.
- e. All stormwater management facilities shall be designed to satisfy the following requirements:
 - i. They shall be capable of withstanding the discharge associated with the 100-year return rainfall event, without failing or resulting in damage to downstream areas. Some nondetention facilities may be designed to bypass stormwater discharges that are in excess of the appropriate design storm. In this case, conveyance must be provided to transport the 100-year surcharge flow to downstream facilities, a natural watercourse, or storm drainage system inlet.
 - ii. All infiltration devices shall be protected from sedimentation. Areas designated for recharge shall not receive runoff until the contributory drainage areas have achieved final stabilization.

~~6-5.~~ No new stormwater discharge shall be permitted onto any beaches/shorelines.

~~7-6.~~ Final landscape designs and plantings shall not adversely impact the stormwater runoff, volume and quality controls and drainage concepts approved as part of the development permit approval process. Landscape design and plantings should enhance opportunities for percolation, retention, detention, filtration and plant absorption of site-generated stormwater runoff.

~~8-7.~~ Irrigation systems used for complying with these stormwater requirements must use of all available surface runoff or other retained or detained stormwater as the water supply source. No groundwater wells or use of potable water for irrigation of any kind will be permitted in developments or redevelopments unless it can be demonstrated that alternative sources of irrigation water are required beyond the amount needed to meet volume control standards in this manual, or other extenuating circumstances apply. Any use of potable water sources must be approved by the stormwater manager. In addition, the design standards outlined in the Fact sheet for Irrigation (PTP-10) shall apply to all irrigation systems. In the case of extenuating circumstances, the designer may present alternate design standards. These must be approved by the stormwater manager prior and calculations and backup data must be presented for review.

~~9-8.~~ The developer shall provide adequate outfall ditches, pipes and easements downstream from the proposed discharge if adequate public or private drainage facilities do not exist to carry the proposed discharge. If the outfall ditches, pipes and easements required for adequate drainage are larger than those needed to carry the additional proposed discharge from the development sought by the applicant, the County may bear those incremental costs that are greater than those properly allocable to the development. The County shall have the authority, however, to condition use of such expanded system by

subsequent users on contributions by such users for allocable portions of the cost borne by the County.



BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA
Wednesday, February 14, 2018
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 – January 10, 2018 ([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, P.E. ([backup](#))
5. UNFINISHED BUSINESS
 - A. Special Presentation - TBD
6. NEW BUSINESS
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
 - A. March 14, 2018 ([backup](#))
9. ADJOURNMENT