



BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA
Wednesday, May 9, 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 – April 11, 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. Regionalization Update
 - B. Easement Acquisition Update ([backup](#))
6. NEW BUSINESS
7. PUBLIC COMMENT
8. EXECUTIVE SESSION
 - A. Discussion of potential litigation arising out of failure to pay stormwater fees.
9. MATTERS ARISING OUT OF EXECUTIVE SESSION





BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA



10. NEXT MEETING AGENDA

A. June 13, 2018 ([backup](#))

11. ADJOURNMENT



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

April 11, 2018 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 04/24/2018

Board Members

Present

Don Smith
Marc Feinberg
William Bruggeman
James Fargher
Patrick Mitchell

Absent

Allyn Schneider

Ex-Officio Members

Present

Van Willis
Andy Kinghorn
Scott Liggett
Kim Jones

Absent

Beaufort County Staff

Eric Larson
Patty Wilson
Carolyn Wallace
Katie Herrera

Visitors

Dr. Alan Warren, USCB Lab
Dr. Eric Montie, USCB
Alice Howard, County Council
Denise Parsick, Beaufort SW Conservation District
Joe Mina, Applied Technology & Management
Sam Connor, Citizen

1. Meeting called to order – Don Smith

- A. Agenda – Approved.
- B. March 14, 2018 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/2018/041118.pdf>

A. Utility Update – Eric Larson

In reference to item # (SOLOCO/regionalization), a RFQ has been issued to seek a consultant to assist with the preparation of regional stormwater standards. The committee plan's to reconvene in 90 days to see who participating financially and work to select a consultant. MOAs will be done if a contract is signed.

Mr. Larson introduced Mrs. Katie Herrera, who was hired as the County's MS4 Coordinator.

B. Monitoring Update – Eric Larson

Please reference the report, no additional updates.

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

Please reference the report, no additional updates.

D. Stormwater Related Projects – Eric Larson

Please reference the report, no additional updates.

E. Professional Contracts Report – Eric Larson

Please reference the report, no additional updates.

F. Regional Coordination – Eric Larson

In reference to item #6, the Fall SESWA Conference, the local community (as a whole) submitted eight papers and two were selected for presentation.

G. Municipal Reports – Eric Larson

In reference to the Mossy Oak Task Force, they are in the process of applying for a grant to fund the first phase of the project (construction). The County has submitted a letter of support for the project, as well as budgeted money for next FY to help fund it.

Ms. Kim Jones mentioned that the Annual Spring May River Clean Up is April 28th.

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

Mr. Larson shared that Mrs. Katie Herrera has met with Ms. Ellen Comeau to get an update on public education and that County staff participated in Touch-A-Truck on April 7th.

In reference to #5, construction permitting, it has been almost a year since the local stormwater permit requirements took effect and the development community has had a lot of questions. The County is planning a series of meetings with DHEC to be able to help explain the processes to the community and then offer an open house for the development community with DHEC staff. This will help the community understand why there are two permits.

Mr. Don Smith asked who consultant, Beth McLaughlin is with. Mr. Larson responded, McLaughlin Consulting; she is a sole practitioner. He indicated Ms. McLaughlin is helping finishing up a few tasks and transitioning work products over to Mrs. Herrera.

Mr. Smith asked about the Harbor Island Rookery. Mr. Larson explained that is something that Ms. Ellen Comeau did as part of her extension services.

I. Maintenance Projects Report – David Wilhelm

Mr. Smith asked about the bush hogging project and how long a project like that lasts. Mr. Larson replied this project was about six months.

5. Unfinished Business

A. Stormwater Master Plan Update – Mr. Joe Mina with Applied Technology and Management gave a presentation to summarize the scope of work and process to produce the Stormwater Master Plan Update. [Stormwater Management Plan presentation is attached.](#)

Mr. Smith asked why the Coosaw and Morgan River watersheds were chosen to be updated. Mr. Mina explained that it was a combination of the water quality and land cover changes. The level of resolution of the data was much better (the land cover model was updated).

Mr. Mina commented that 2006 plan projects for Hilton Head Island that haven't been completed are still valid today. He noted that models don't always reflect reality. This update reinforced that the original plan was solid to begin with.

Mr. Smith asked if the recommendations considered current or future growth projections. Mr. Mina explained there were few watersheds that met or exceeded the 2006 projections. Mr. Smith asked if current FEMA maps were used, Mr. Mina said current as of 2015. Mr. Smith asked if the 100 year storm was used. Mr. Mina said yes, they used it for evacuation routes and primary roads.

Mr. Billy Bruggeman asked what is next [now that report is complete]. Mr. Larson indicated that the recommendations will become part of Capital Improvement Projects and will be incorporated into the next five-year plan. Mr. Bruggeman asked what action is needed from County Council. Mr. Larson said none, this is a report received and acknowledged only. He indicated that County Council will see the plan in parts, as they vote on the budget for projects.

6. New Business –

A. USCB Grant Proposal Presentation – Dr. Eric Montie and Dr. Alan Warren, USCB –
Dr. Eric Montie and Dr. Alan Warren presented a monitoring pilot study proposal.

Dr. Warren shared DHEC monitoring data for different watersheds that was taken over an 18 year period, one sample taken per month. [Dr. Warren's data presentation is attached.](#)

Chechessee Creek (new TMDL) has a lower fecal count overall, but the same trend exists.

Mr. Marc Feinberg asked looking from economic oyster bed perspective about other municipalities, so if they follow similar trends and same levels. Dr. Warren said he can't answer that. He commented that he could see Charleston and Berkley County data and that the Mt. Pleasant and May River comparison would be interesting. He noted the data from DHEC is readily available.

Dr. Montie presented a [Historical Analysis of Water Quality and Climate Change Endpoints and Monitoring of Natural Resources in the May River – A Pilot Study for Other Watersheds in Beaufort County.](#)

Ms. Kim Jones shared that the Town of Bluffton has committed to help fund this research, and Mr. Larson expressed to her that it may be a good regional effort to partner together to support. Mr. Smith commented that he didn't know all of this historical data was available.

Mr. Feinberg asked if the grant is it mostly data mining vs field work. Dr. Montie said this [proposed amount] is what it takes to do the work, he doesn't know an exact percentage (data vs. field), but the University doesn't provide funding for staff for the labs.

Ms. Jones indicated the value that the Town of Bluffton saw in the partnership was to inform the update of the May River Action Plan and help direct and prioritize resources and efforts. It will show which watersheds are seeing the greatest changes.

In reference to a question, Mr. Larson explained that part of the MS4 requirements are to prove your program is getting better over time and this would help move in that direction. The County would be using expertise to help direct it to where it needs to be. The May River in not just the Town of Bluffton's concern, it is a shared watershed with the County. Thinking regionally and proactive, the County has \$15k pending in the budget for approval to co-support the project.

Dr. Montie shared that this project is a joint effort between his lab and Dr. Warren's lab.

A motion was made to recommend that \$15k in the budget to support the research effort (presented by Dr. Montie).

Brief discussion took place about possible findings, comparisons, and correlations that may be able to be made with this data. Dr. Warren commented there is a large value in being able to compare the watersheds.

The motion to recommend the \$15k in the budget be used to support the project was approved (5/0).

B. Discussion Only – Restructuring of the Stormwater Management Utility Board – Mr. Larson explained that Ms. Alice Howard brought this topic for discussion up, as she is the County Council representative for Natural Resources Committee as well and would like to hear opinions on it. Mr. Larson expressed that the Stormwater Utility Board may not be operating the way it was envisioned it would be. Is it a regional board where all five jurisdictions in Beaufort County (three more if Jasper County is included) equally share what is going on in their programs? Or is it a County board, where only the County program is talked about? Should it be a Utility board only, that meets a few times a year to go over management fees, collection rates, etc.?

Ms. Howard shared that many other boards/committees have one vote for each County district. She commented the municipalities could be represented better than they are now, as there are Ex-Officio members. She also stated that stormwater may not be ready for regionalization, but this could be a step.

Discussion took place on the recommendation/voting process involving the stormwater board. The information goes from SWIC to Stormwater Utility (Advisory) Board, then to Natural Resources Committee and on to County Council.

Mr. Don Smith and Mr. Scott Liggett shared some history of the Stormwater Utility Board and its purpose and accomplishments. Lengthy discussion then took place regarding the topic. As a result of the discussion, a future action recommendation is to organize a workshop to discuss the Stormwater Utility Board.

7. Public Comment(s) – None.

8. Next Meeting Agenda – Approved.

Additions to May 9, 2018 Agenda

- Unfinished Business –
 - Regionalization Update

9. Meeting Adjourned



Beaufort County 2018 Stormwater Management Implementation Guide:

An Update to the 2006 Stormwater Management Plan

Presented to the Stormwater Utility Board
April 11, 2018



APPLIED TECHNOLOGY & MANAGEMENT, INC.
941 Houston Northcutt Blvd., Suite 201 | Mt. Pleasant, SC 29464 | www.appliedtm.com
Coastal, Environmental, Marine & Water Resources Engineering

Overview of Scope of Work

▶ **Kickoff Meeting with the SWIC**

- ▶ Facilitated a meeting of the SWIC to discuss and finalize any changes to the Scope of Services
- ▶ Reviewed schedule of tasks, and established collaboration between jurisdictions

- ▶ **Meeting Held Feb 6, 2016**
- ▶ **Memo summarizing meeting**

Overview of Scope of Work

- ▶ **Review and Analysis of 2006 SWMP**
- ▶ Performed high-level review the 2006 SWMP.
- ▶ Compared this to the current direction of the County and Jurisdictions and worked with the County and SWIC staff to develop format and direction of the changes, updates or corrections needed to the 2006 SWMP.
- ▶ **Emails and in person/phone with County and SWIC staff defining process and products.**
- ▶ **Ongoing from Kickoff to Approx. Aug 2017 when final studies and modeling was completed.**

Overview of Scope of Work

▶ Facilitation of Public Meetings to Gain Citizen Input

- ▶ Preliminary Coordination meeting with SWIC
- ▶ Public meetings were held in:
 - ❖ Burton
 - ❖ St. Helena
 - ❖ Bluffton
 - ❖ Hilton Head Island
- ▶ Public meetings for SWMP Update combined with County BMP Manual Rollout
- ▶ **Meetings held June and September 2016**
- ▶ **Comment cards collected and comments collated**
- ▶ **Interactive map with push pins of problem areas was produced**
- ▶ **Summary Memo.**

Overview of Scope of Work

▶ **Review of Collected Water Quality Data Base**

- ▶ Gathered Data from years of sampling activity
 - ▶ Performed analyses to characterize the data's central tendencies and variability
 - ▶ Identified locations of increasing concentrations.
 - ▶ Compare model to existing water quality standards to identify possible water quality issues
 - ▶ Coordinated with the SWIC
 - ▶ Identified areas using GIS and tied to the existing sub-watersheds
 - ▶ Recommended changes to the Water Quality Sampling program
-
- ▶ **2 Technical memorandums**
 - ▶ **Meeting with SWIC.**

Overview of Scope of Work

- ▶ **Water Quality and Hydraulic Modeling**
- ▶ Reviewed the modeling information available from the 2006 SWMP
- ▶ Updated Land Use and Cover conditions to 2016 conditions
- ▶ Recommended Watersheds for updating
 - ❖ Calibogue Sound
 - ❖ May River
 - ❖ Colleton River
 - ❖ New River
 - ❖ Beaufort River
 - ❖ Coosaw River
 - ❖ Morgan River
- ▶ Updated Hydraulic and Hydraulics & Water Quality Models

- ▶ **Recommended stormwater system improvements**
- ▶ **Identified projects to correct problems.**
- ▶ **Meetings with SWIC**

Overview of Scope of Work

▶ **Update CIP Based on Model Output**

- ▶ Reviewed current CIP Projects
- ▶ Recommended projects in each watershed
- ▶ Categorized projects by jurisdiction

▶ **Updated CIP Document and information cards**

- ▶ **Meetings with individual jurisdictions to review projects.**

▶ **SW Ordinance and BMP Manuals Recommendations**

- ▶ For use by all jurisdictions for BMP Manual and SWM ordinances.
- ▶ Incorporated by the county in their revised BMP manual (work performed under separate contract for County Manual)

Overview of Scope of Work

▶ **Primary and Secondary Drainage Systems Inventory**

- ▶ Provided a list of priority areas for the County and municipalities to concentrate their primary and secondary drainage system inventory efforts along with a GIS layer showing the priority areas.

▶ **Report Development and Presentations**

- ▶ Documented the result of all tasks into a single document.
- ▶ Presented document to SWIC for input and comments
- ▶ Revised document and created final version

▶ **Final Implementation Guide**

- ▶ **PowerPoint presentation**

Overview of Implementation Guide

▶ Seven Watersheds

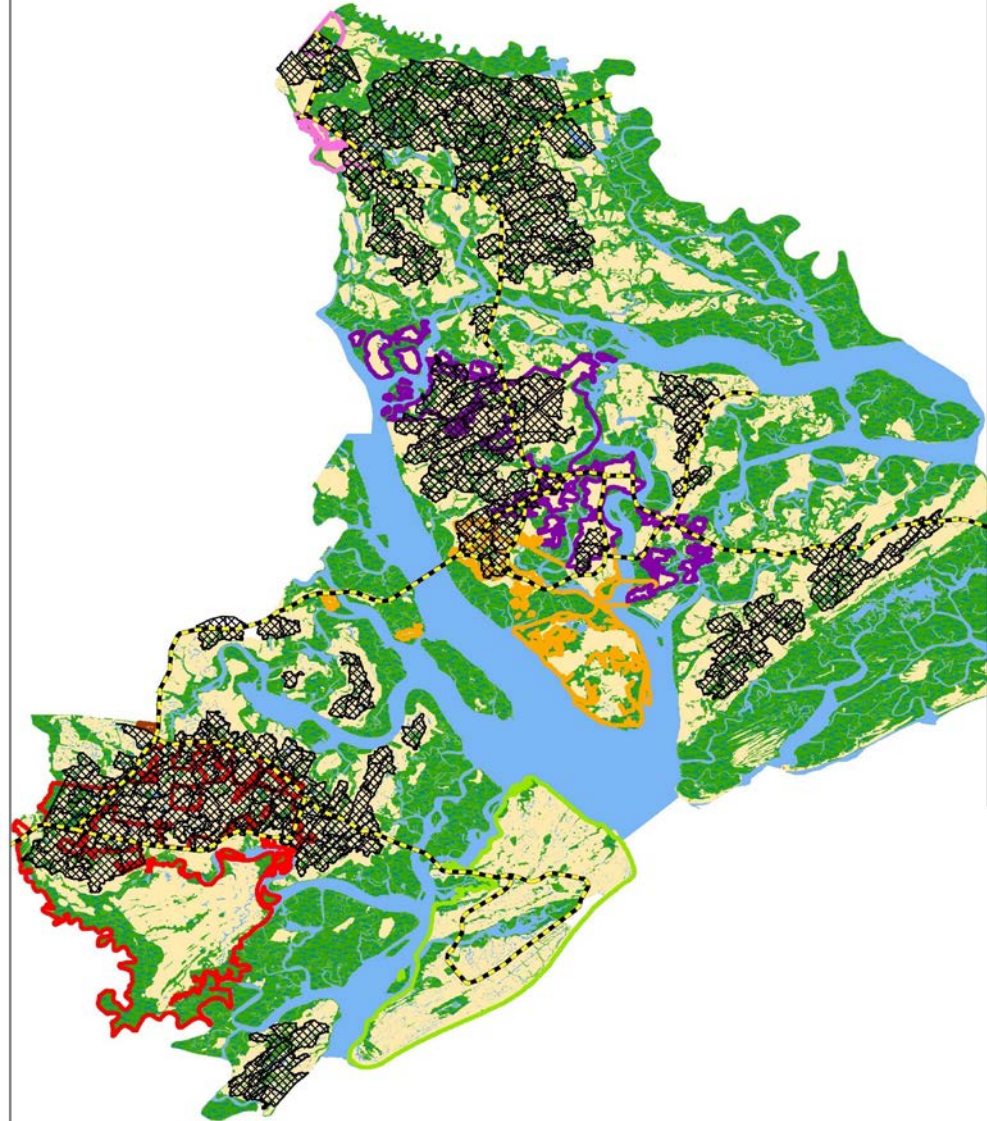
- ▶ Figure ES-1
- ▶ Section 3 Calibogue Sound
- ▶ Section 4 May River
- ▶ Section 6 Colleton River
- ▶ Section 7 New River
- ▶ Section 8 Beaufort River
- ▶ Section 9 Coosaw River
- ▶ Section 11 Morgan River



Overview of Implementation Guide

▶ Areas of H&H Modeling

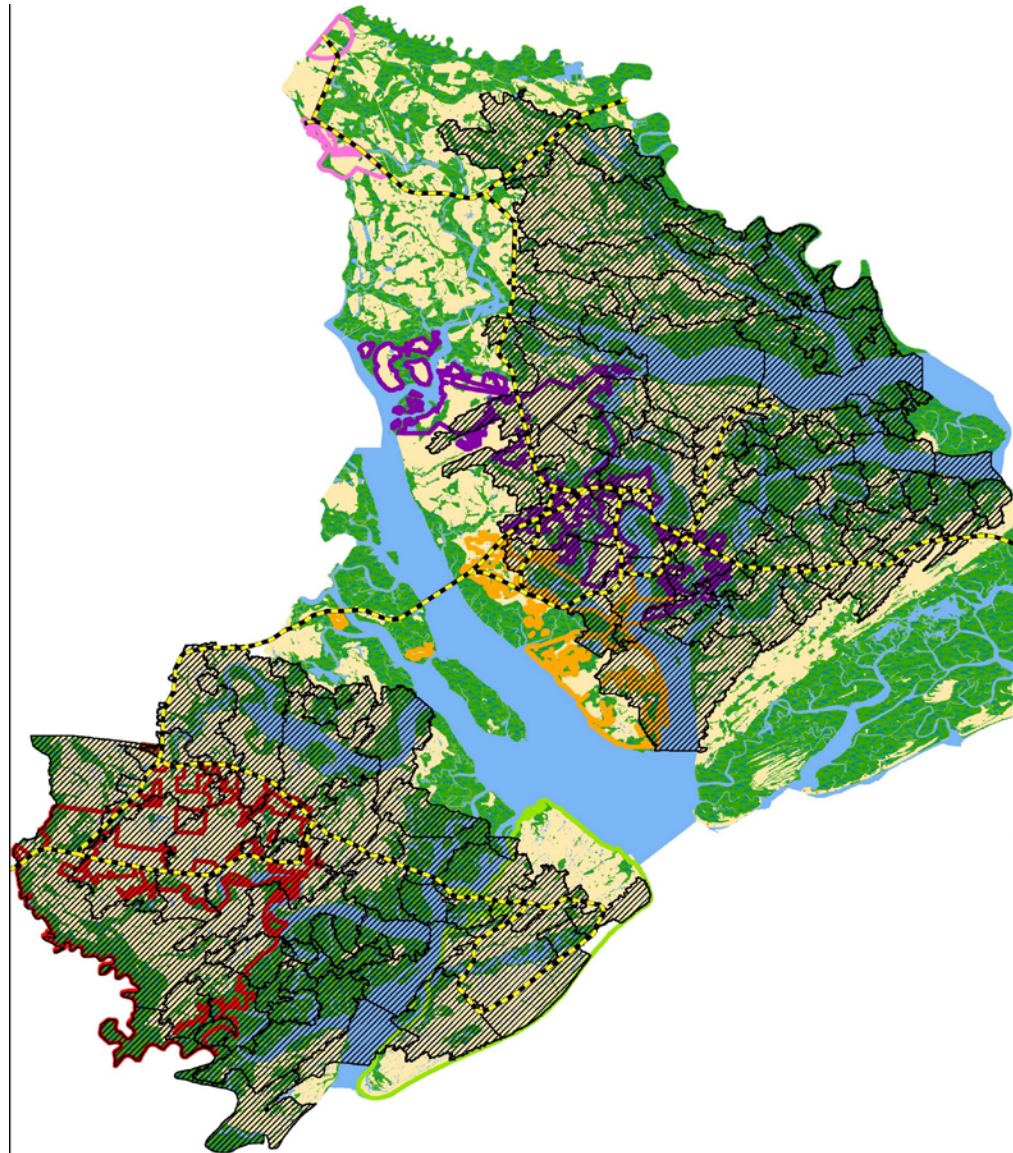
- ▶ Figure ES-2U
- ▶ Limited to specific sub-watersheds
- ▶ Updated Existing Land Use
- ▶ Updated Existing Cover
- ▶ Located Overtopping
- ▶ Recommended Improvements



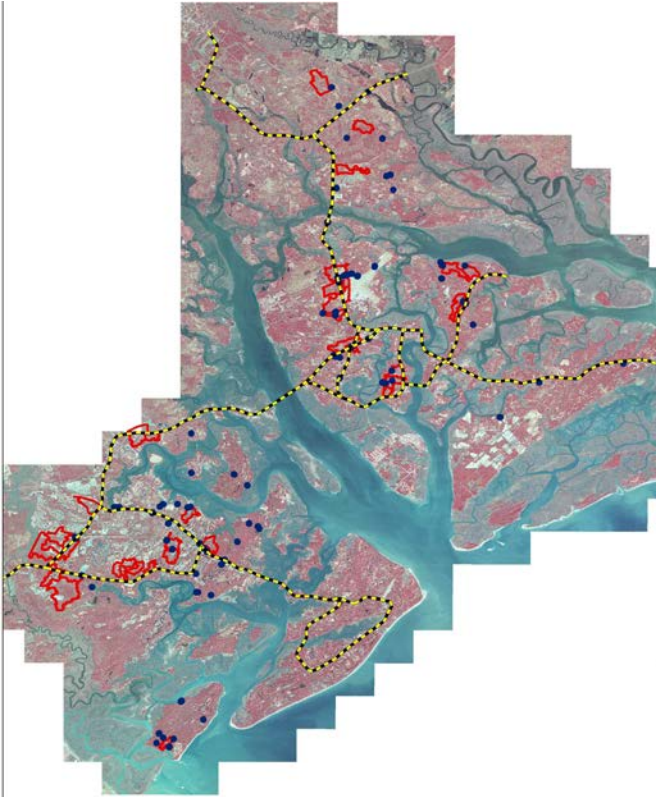
Overview of Implementation Guide

▶ Areas of WQ Modeling

- ▶ Figure ES-3U
- ▶ Limited to specific sub-watersheds
- ▶ Updated Existing Land Use
- ▶ Updated Existing Cover
- ▶ Reviewed Existing Sampling Locations
- ▶ Recommended New Sampling Stations
- ▶ Recommended BMP's



Overview of Implementation Guide

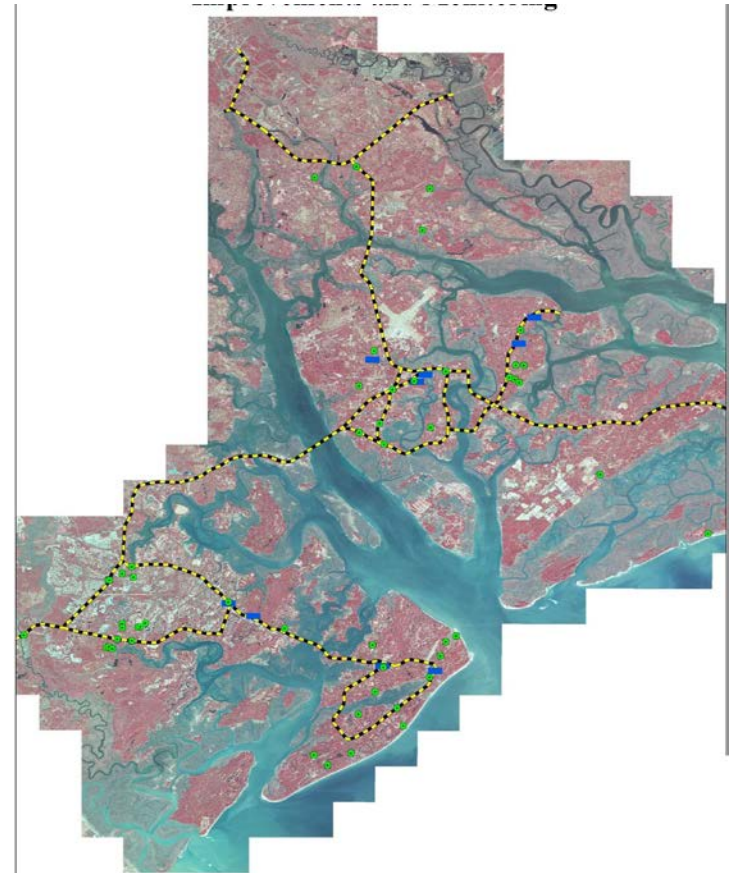


▶ Overtopping Locations

▶ Figure ES-4U

▶ Updated Monitoring and BMP Locations

▶ Figure ES-5U



2018 Update Recommended Capital Improvements Projects

3/3/2018

Project Name	Municipality	2015 Capital Costs	2017 Capital Costs	Notes
Brewer Memorial Park Demonstration Wet Pond Project Feasibility	Beaufort County	\$79,500	\$82,327	From 2015 CIP - In Progress (Funded)
Factory Creek M2	Beaufort County	\$1,740,000	\$1,801,883	From 2015 CIP - In Progress (Funded). Map updated by ATM to show Coleman & Academy Park locations.
Sawmill Creek Overtopping/Forby land	Beaufort County	\$150,000	\$155,335	From 2015 CIP - In Progress (Funded)
Salt Creek South M1	Beaufort County	\$2,045,000	\$2,117,730	From 2015 CIP - In Progress (Funded)
Shanklin Road M2	Beaufort County	\$3,340,000	\$3,458,787	From 2015 CIP - In Progress (Funded)
SC170/Okatie West	Beaufort County	\$975,000	\$1,009,676	From 2015 CIP
Grober Hill M2	Port Royal	\$2,525,000	\$2,614,801	From 2015 CIP
Camp St. Mary M2	Beaufort County	\$3,757,000	\$3,890,617	From 2015 CIP This project is complaint driven (not model driven)
Battery Creek West M1	Beaufort Cty	\$4,140,000	\$4,287,238	From 2015 CIP
Sawmill Branch 1 Regional BMP	Beaufort County	NA	\$2,063,688	This is across the street from the Forby/Sawmill project currently in progress. This project would be a compliment to the current p recommended to be considered, however can take a lower priority than others in this list.
Sawmill Branch 2 Regional BMP	Beaufort County	NA	\$1,071,064	
Jarvis Creek 2 Regional BMP	Hilton Head	NA	\$2,443,649	
Broad Creek 4 Regional BMP	Hilton Head	NA	\$991,759	
Rock Springs Creek 1 Regional BMP	Beaufort County	NA	\$430,524	
Lucy Point Creek Regional BMP	Beaufort County	NA	\$438,293	
Albergotti Creek 2 Regional BMP	Beaufort County	NA	\$602,447	This is in close proximity to the Shanklin Road Project (above) as it is currently being designed and relocated due to project needs. located on a separate tributary than the Shanklin Road Project and therefore it is recommended to be considered, however can take priority than others in this list.
Battery Creek N1 Regional BMP	Beaufort Cty	NA	\$1,369,982	
Battery Creek N2 Regional BMP	Beaufort Cty	NA	\$618,543	

**2017 costs are calculated using historical cost indices from RSMMeans*

Previous (2015) Unfunded Projects	\$11,802,333
NEW ADDITIONAL PROJECTS	\$10,029,949
TOTAL	\$21,832,282

In Progress (Funded) and items from 2015 CIP were reviewed and analyzed against the current update information and are recommended to be retained. Others were removed from the 2015 list. No updates to the attached "cards" were completed with the exception of the Factory Creek M2 project.

TABLE 3-18 (Updated 2017)
 PLANNING LEVEL COST ESTIMATES FOR
 CALIBOGUE SOUND WATERSHED

MODEL CONDUIT	PROJECT	ESTIMATED COST
MS_M-1*	Road overtopping at Masters Drive Replace existing 3 - 18" RCP with 10 - 36" RCP	\$129,000
WP_M-2*	Road overtopping at Bayley Road Replace existing 3 - 24" RCP with 3 - 4'x4' box culverts	\$152,000
WP_M-3*	Road overtopping at Colleton River Drive Replace existing 3 - 18" RCP with 1 - 7'x4' box culverts Raise road 2.9 ft (length of 660 ft)	\$805,000
WT_M-2	Road overtopping at Cooper River Landing Road Replace existing 1 - 30" RCP with 4 - 8'x5' box culverts Raise road 2.4 ft (length of 670 ft)	\$520,000
WT_M-4	Road overtopping at Freeport Road Replace existing 1 - 18" CMP with 20 - 36" RCP Raise road 1.4 ft (length of 640 ft)	\$352,000
	TOTAL	\$1,958,000

TABLE 7-12 (Updated 2017)
 PLANNING LEVEL COST ESTIMATES FOR
 NEW RIVER WATERSHED

MODEL CONDUIT	PROJECT	ESTIMATED COST
DS_M-2	Road overtopping at Benjies Point Road Add 7 - 36" RCP to existing 2 - 36" RCP	\$76,000
E_M-3	Road overtopping at Prospect Road Replace existing 1 - 15" CMP with 2 - 36" RCP	\$33,000
M_M-3	Road overtopping at Prospect Road Replace existing 1 - 24" CMP with 4 - 8'x4' box culverts Raise road 1.8 feet (length of 360 ft)	\$339,000
M_M-7	Road overtopping at School Road Replace existing 1 - 18" RCP with 4 - 36" RCP	\$48,000
OR_M-3	Road overtopping at Prospect Road Add 3 - 36" RCP to existing 1 - 36" CMP Raise road 1.0 feet (length of 260 ft)	\$45,000
OR_M-6	Road overtopping at Beach Drive Raise road 0.8 feet (length of 170 ft)	\$105,000
	TOTAL	\$646,000

TABLE 4-18 (Updated 2017)
 PLANNING LEVEL COST ESTIMATES FOR
 MAY RIVER WATERSHED

MODEL CONDUIT	PROJECT	ESTIMATED COST
AL_M-1	Road overtopping at Ulmer Road Replace existing 1 - 36" RCP and 1 - 30" RCP with 1 - 8'x4' box culvert Raise road 1.8 ft (length of 1,200 ft)	\$756,000
BE_M-4	Road overtopping at SC 46 Replace existing 2 - 36" CMP with 2 - 5'x5' box culverts	\$156,000
MR_M-1	Road overtopping at Palmetto Bluff Road Add 2 48-in RCP culverts to existing 2 - 48" and 1 - 36" RCP	\$67,000
U_M-1	Road overtopping at Alljoy Road Replace existing 1 - 48" CMP with 1 - 5'x5' box culvert	\$212,000
SC_T1-4	Road Overtopping at May River Road (State HWY 46) Raise road from elevation 18.1 ft to elevation 18.3 ft NAVD	\$157,000
U_M-3	Road overtopping at Confederate Avenue Replace existing 2 - 36" RCP with 2 - 8'x4' box culverts	\$173,000
	TOTAL	\$1,521,000

TABLE 11-20 (Updated 2017)
 PLANNING LEVEL COST ESTIMATES FOR
 MORGAN RIVER WATERSHED

MODEL CONDUIT	PROJECT	ESTIMATED COST
CNC_M-6	Road overtopping at Langford Road Replace existing 1 - 24" RCP with 1 - 8'x4' box culvert Raise road 1.1 ft (length of 620 ft)	\$267,000
FC_M-3	Road overtopping at Holly Hall Road Replace existing 1 - 24" RCP with 3 - 8'x4' box culverts	\$226,000
RSC_M-3*	Road overtopping at Sams Point Road Replace existing 1 - 36" RCP with 1 - 8'x6' box culvert	\$117,000
RSC_M-5	Road overtopping at Wade Hampton Drive Replace existing 1 - 24" RCP with 1 - 8'x4' box culvert	\$111,000
	TOTAL	\$721,000



Cost/Benefit for CIP BMP Projects

	Calibogue		Colleton		Beaufort			Coosaw	Morgan
	Jarvis Creek 2	Broad Creek 4	Sawmill Branch 1	Sawmill Branch 2	Albergotti Creek 2	Battery Creek N1	Battery Creek N2	Lucy Point Creek	Rock Spring Creek 1
Parameter	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr
TN	646	527	809	247	270	678	435	120	361
TP	148	130	190	72	82	128	79	30	144
TSS	74000	59910	95912	28495	31783	79724	53190	13256	33583
Total lbs	74794	60567	96911	28814	32135	80530	53704	13406	34088
Cost	\$ 2,443,649	\$ 991,759	\$ 2,063,688	\$ 1,071,064	\$ 602,447	\$ 1,369,982	\$ 618,543	\$ 438,293	\$ 430,524
Cost/lb	\$ 33	\$ 16	\$ 21	\$ 37	\$ 19	\$ 17	\$ 12	\$ 33	\$ 13

Summary of Projects & Costs

▶ Overtopping/Primary Storm System Improvements

- ▶ 76 Locations in Updated Watersheds Only
- ▶ Cost \$22.2 Million
 - ▶ Public Projects \$9.2 Million
 - ▶ Private Projects \$12.9 Million

▶ Water Quality/Regional BMP Improvements

- ▶ 9 Locations in Updated Watersheds Only
- ▶ Cost \$10.0 Million
 - ▶ Includes construction and land acquisition estimate

Summary of Projects & Costs

▶ Other Recommendations

- ▶ Water Quality Monitoring – Monthly Sampling
- ▶ Operation and Maintenance – Keep Systems working
- ▶ Update GIS elevation data – FEMA
 - ▶ \$300,000 budgetary cost estimate
- ▶ Update Software & Models
 - ▶ \$50,000 per year estimate

Questions

Q & A

Joseph A. Mina, P.E.
Applied Technology & Management

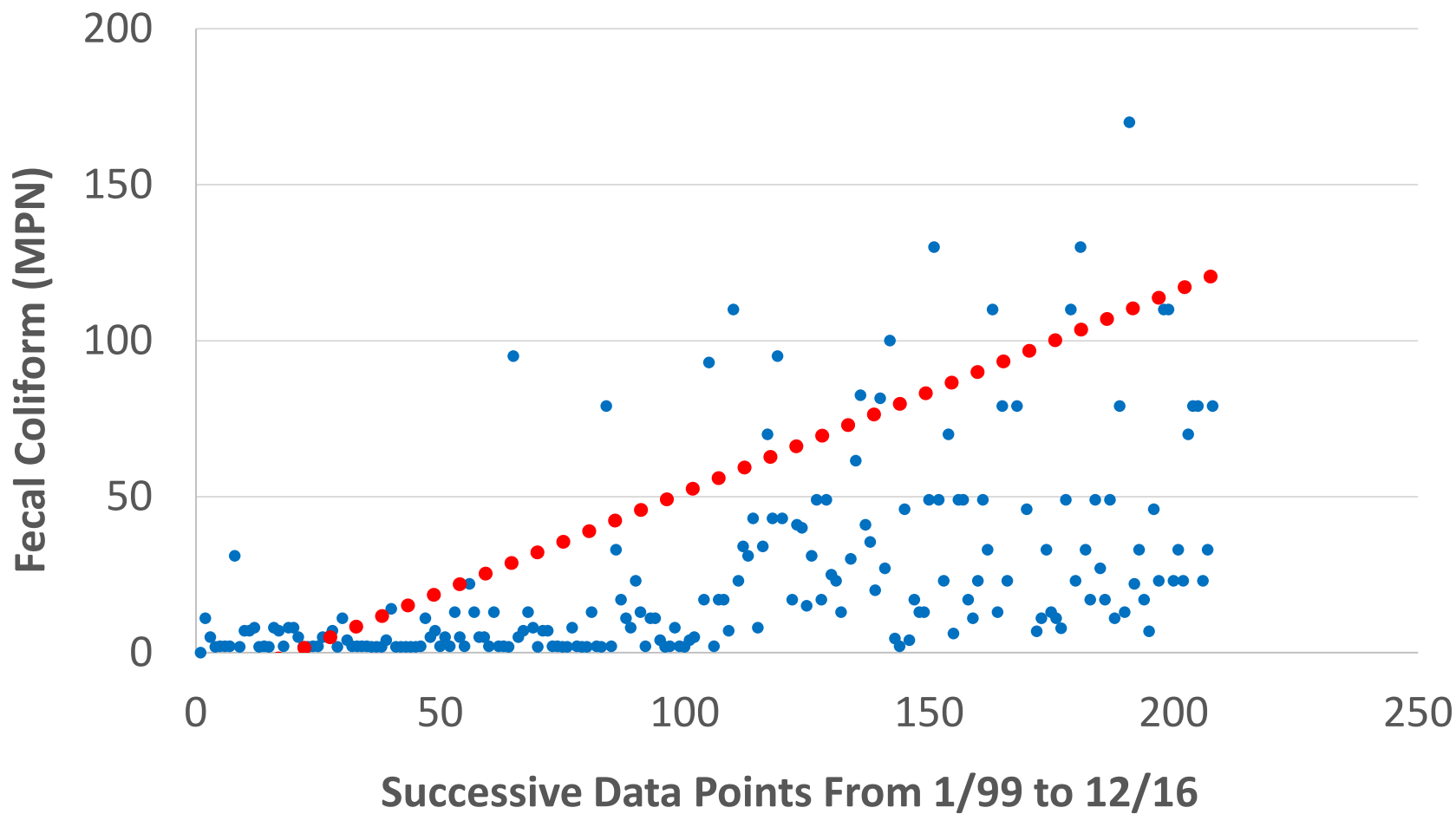
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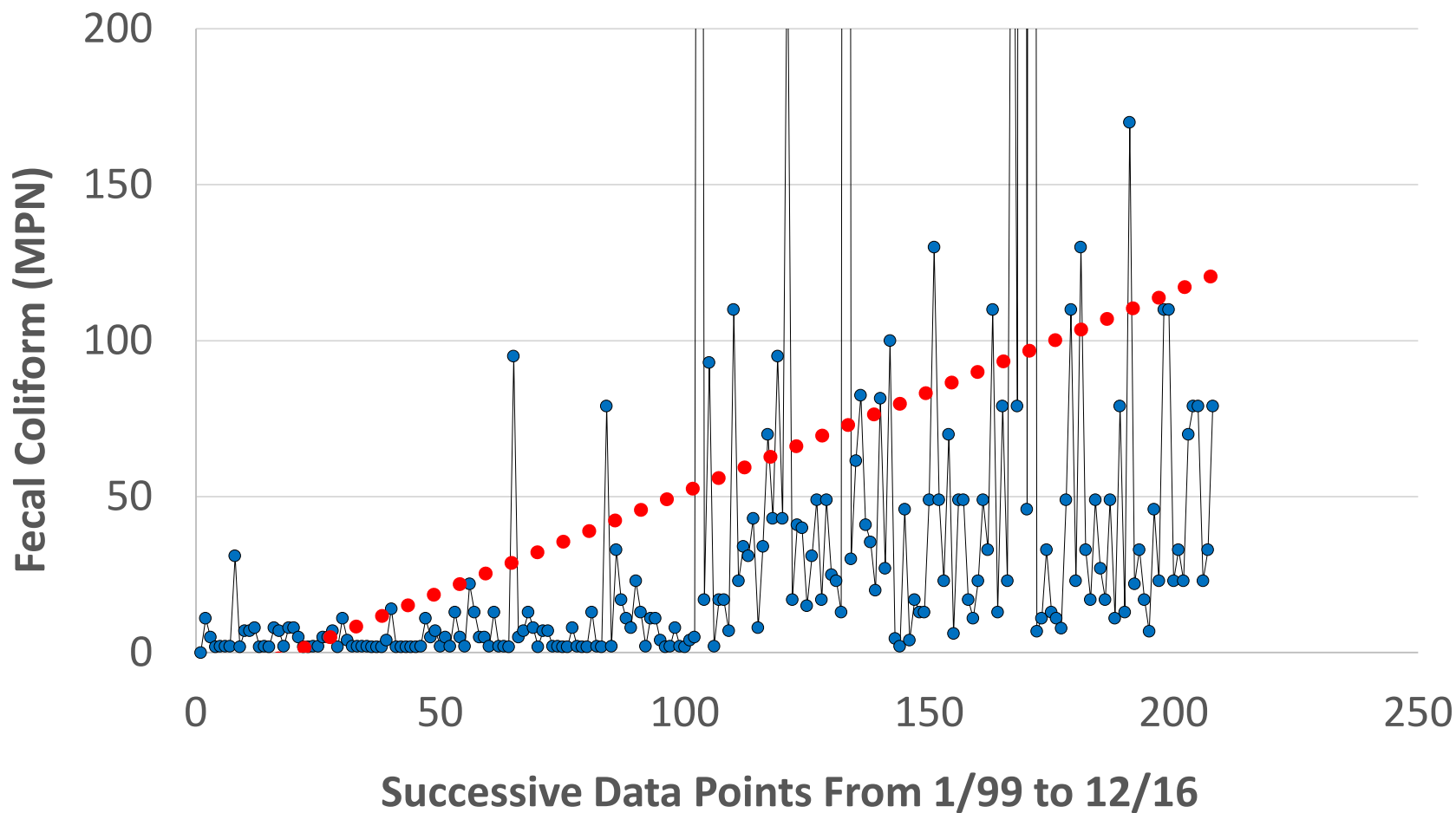
Beaufort County Stormwater Management Utility Board Meeting

April 11, 2018

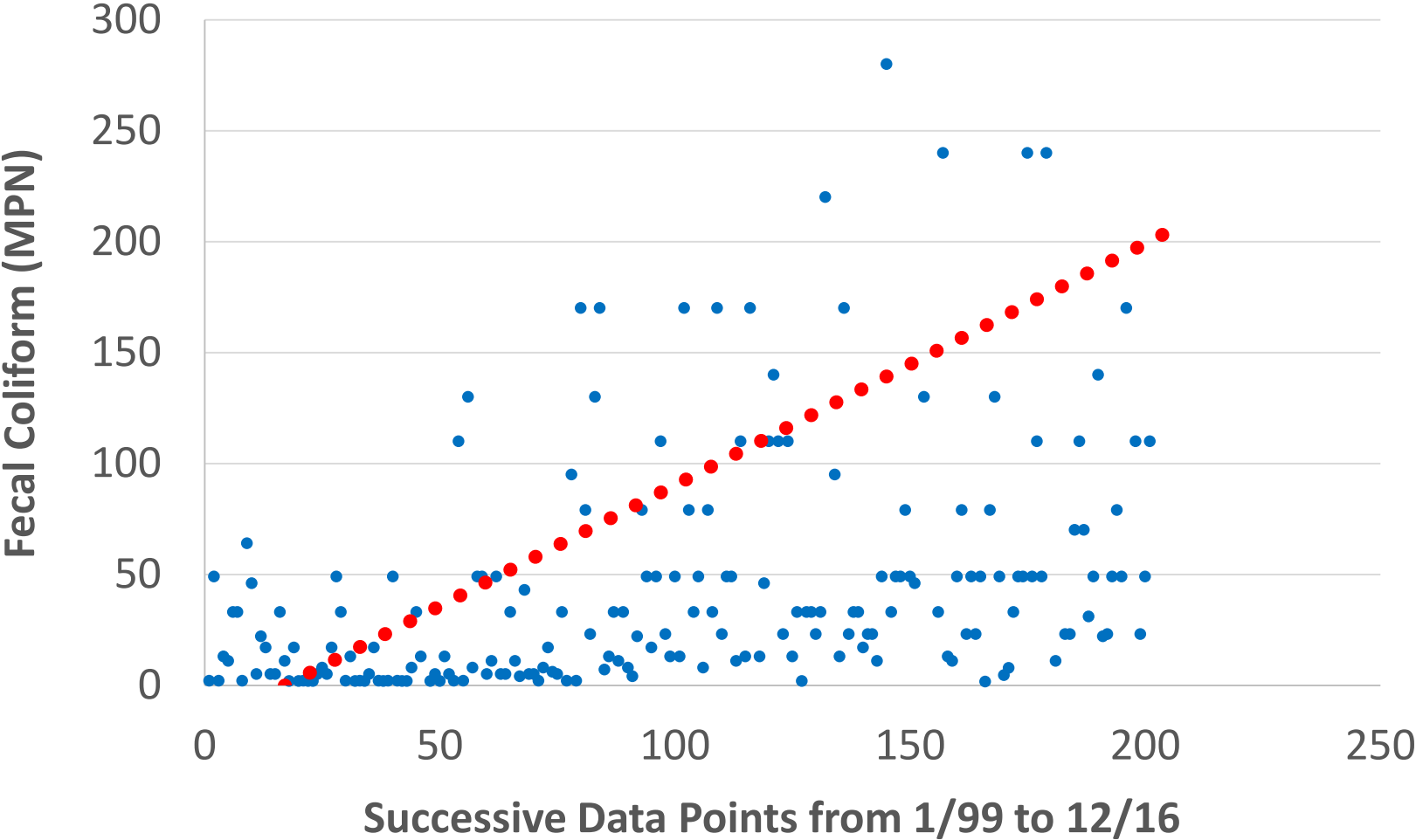
May River Station 19-19 (n=207)



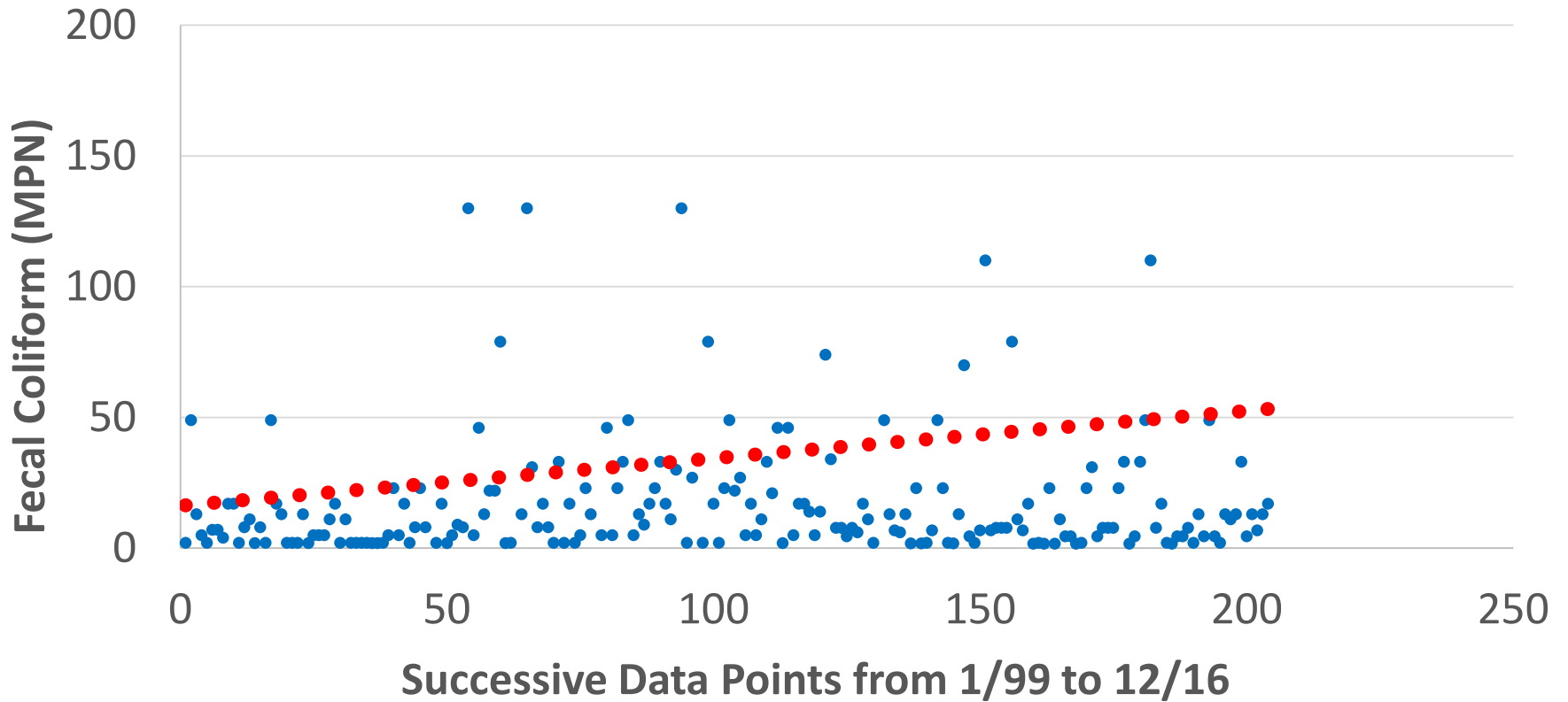
May River Station 19-19 (n=207)



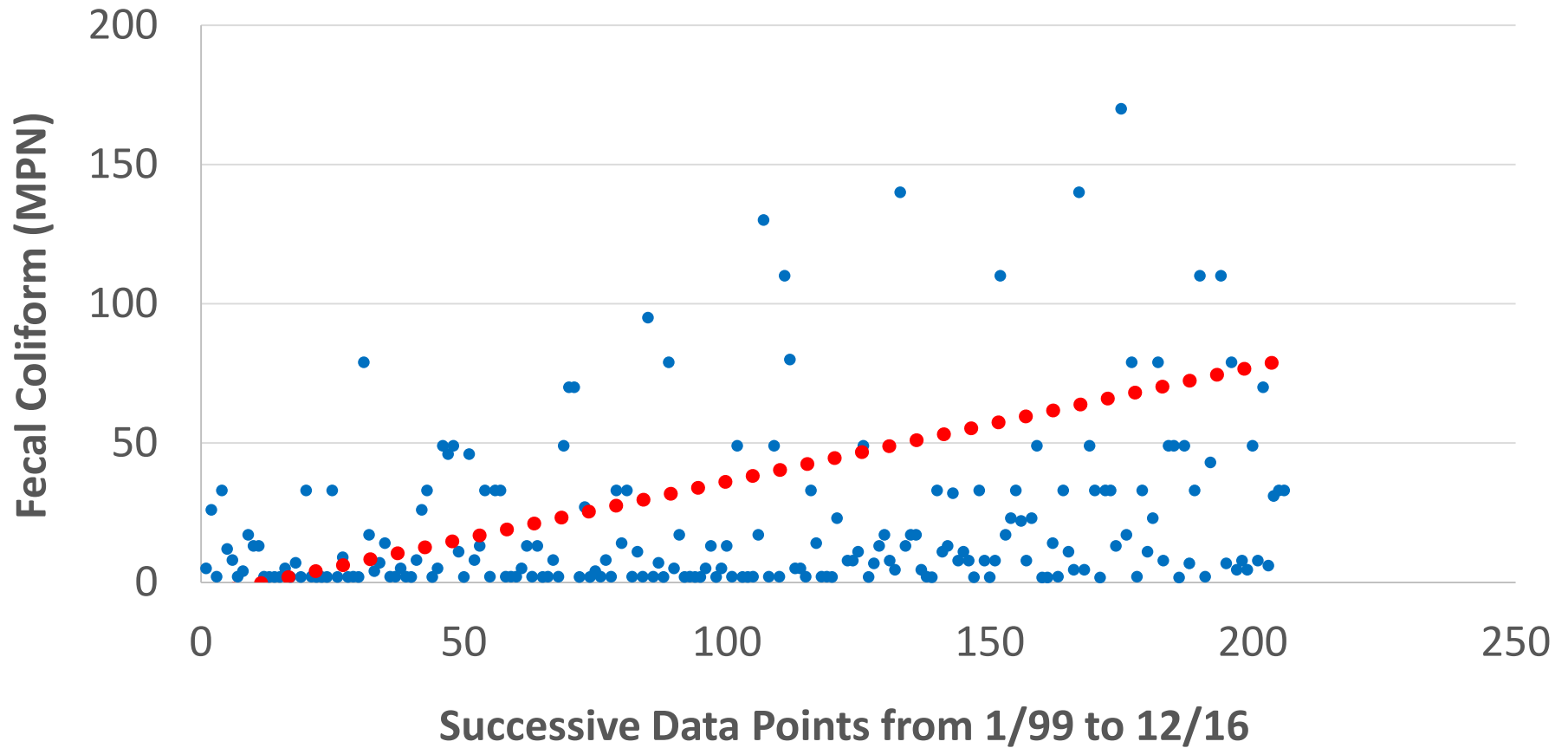
Okatie River Station 18-08 (n=202)



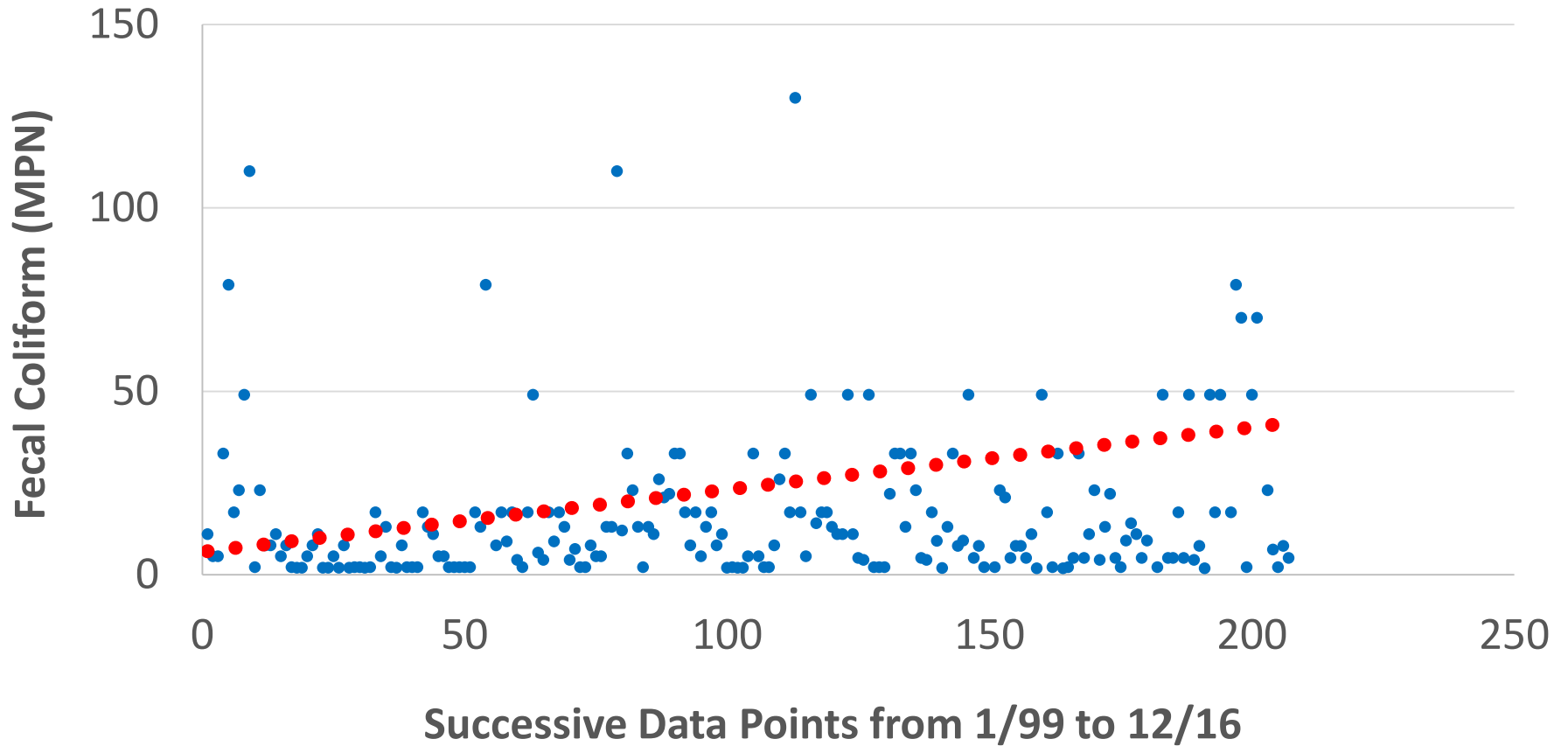
Chechessee Creek Station 18-09 (n=205)



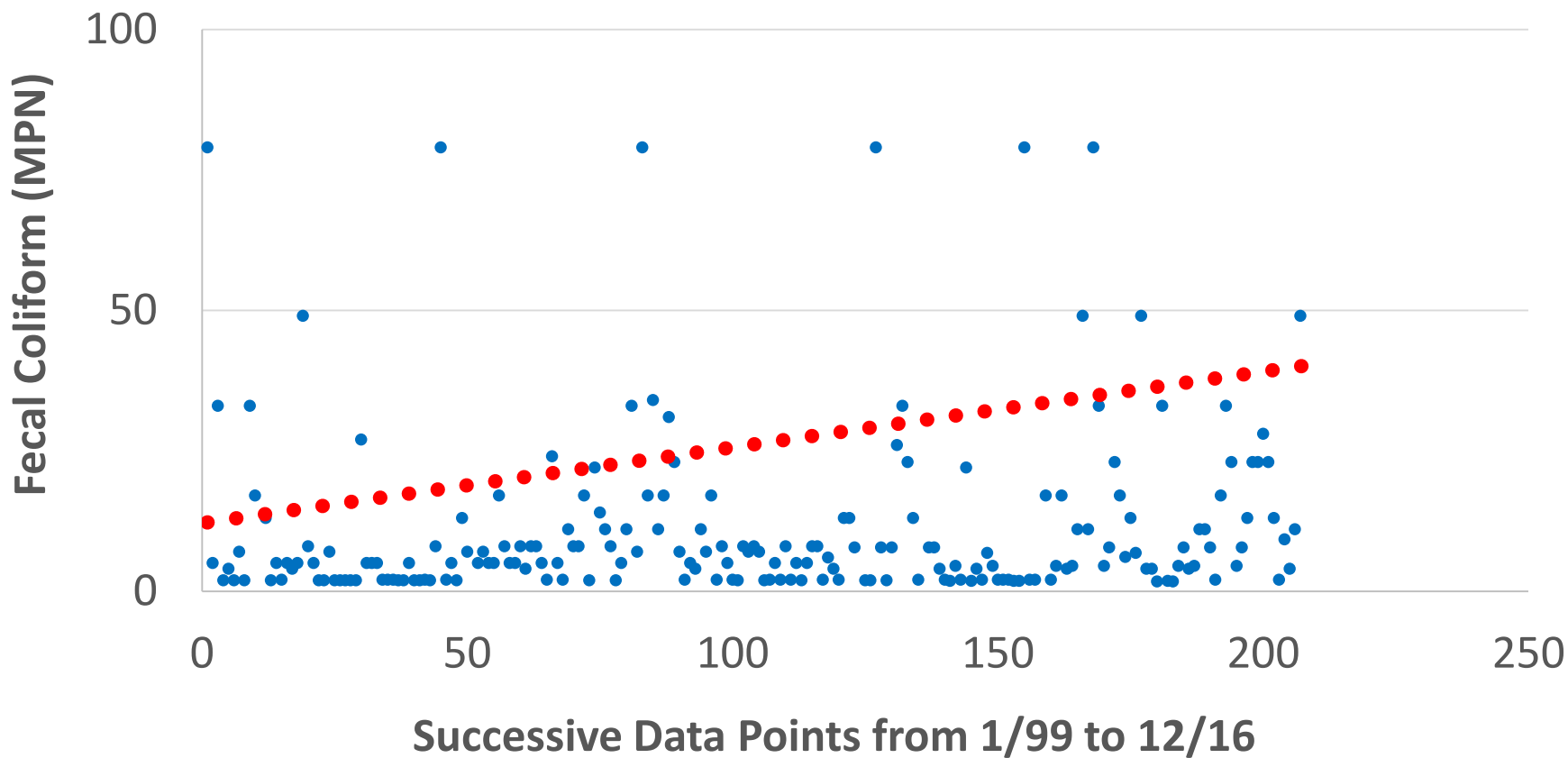
Habersham Creek Station 17-16A (n=207)



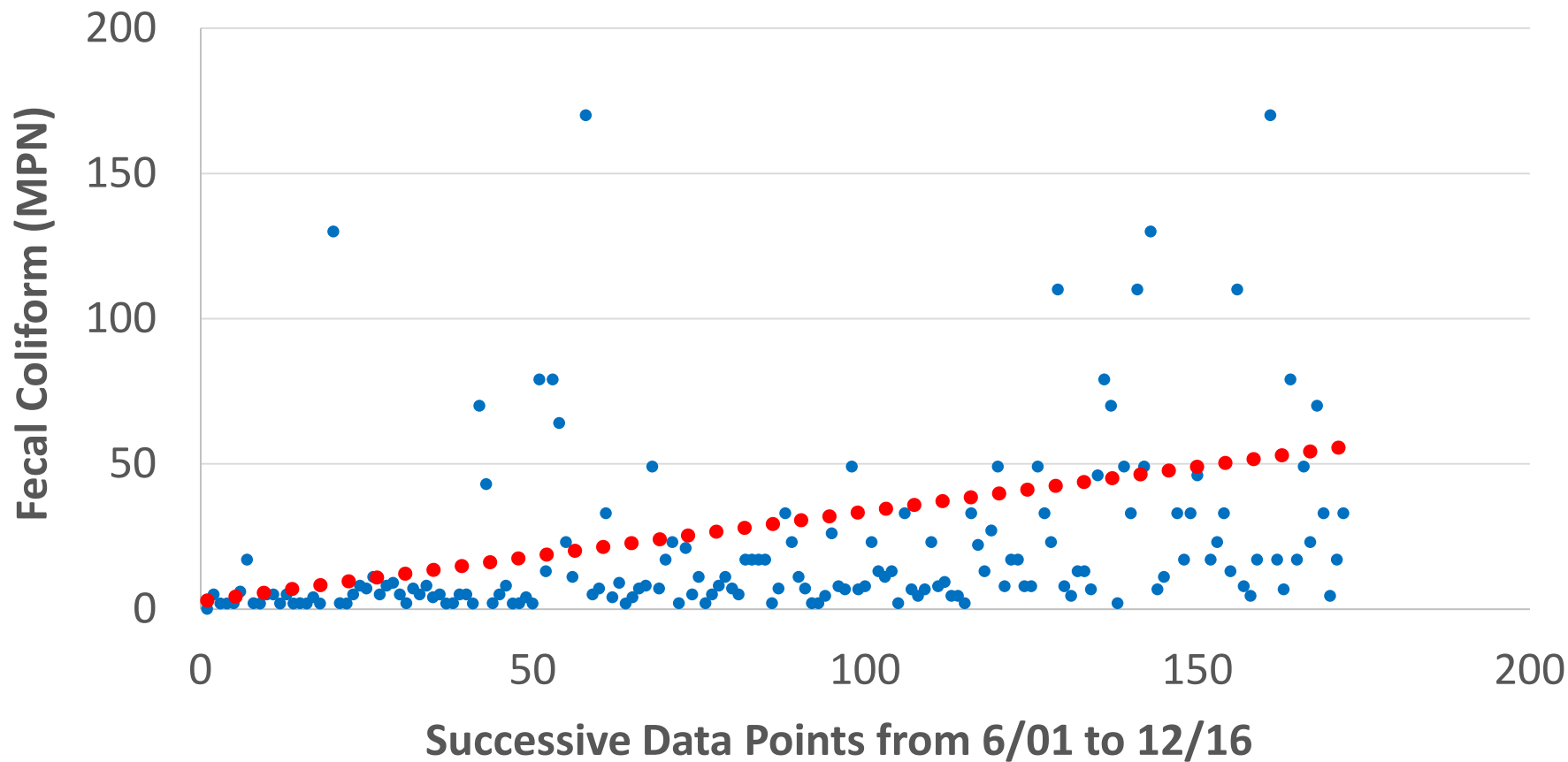
Battery Creek Station 15-19 (n=207)



Campbell Creek at Whale Branch River Station 14-02 (n=207)



Hazzard Creek, Jasper Co. Station 17-25 (n=172)



SCOPE OF SERVICES FISCAL YEAR (July 2018 to June 2019)

“Historical Analysis of Water Quality and Climate Change Endpoints and Monitoring of Natural Resources in the May River – A Pilot Study for Other Watersheds in Beaufort County”

The Scope of Services in this MOU Addendum between the Town of Bluffton and USCB (specifically the Marine Sensory and Neurobiology Lab or USCB-MSNL and the USCB Water Quality Lab or USCB-WQL) includes those activities specified in sections A-E below.

Note: The May River has been chosen for this pilot study because Dr. Montie has been working in this watershed since 2011. The goal will be to focus data mining, statistical analysis, and natural resource monitoring in the May River during the 2018-2019 funding cycle with historical comparisons of water temperature, fecal coliform, and salinity levels to the Okatie River, Broad Creek, and Battery Creek. This focused approach will allow us to formalize our data mining approach and statistical methodology that can then be applied to all watersheds in Beaufort County as future work.

A. Historical Analysis of SCDHEC Shellfish Monitoring Data

1. For each SCDHEC Shellfish Monitoring station in the May River, a historical evaluation will be completed of existing parameters (**i.e., water temperature, fecal coliform, and salinity levels**) from 1999 to 2016. Statistical analysis (i.e., regression analysis) will be performed for each parameter at all monitoring stations.
2. From these data, USCB will determine how these parameters changed over the years and what monitoring stations have undergone the most degradation.

B. Understanding Factors that Influence Fecal Coliform Levels

1. USCB will determine what factors have influenced fecal coliform levels in the May River. Initial factors will include temporal parameters (e.g., year, season, month, lunar phase, tidal phase), geographical parameters (e.g., sampling station, distance from the mouth of the May River, width of river, depth), and environmental data (e.g., water temperature, rainfall, salinity levels, dissolved oxygen, pH). This will be accomplished using specific statistical methods (i.e. General Linear Models).
2. USCB may also explore how changes in human activities have affected fecal coliform levels in the May River by incorporating growth parameters (e.g., population, the amount of impervious surface, forested land).
3. This type of data analysis may help explain why sudden changes in fecal coliform levels appear at certain monitoring stations and could provide some insight into developing more effective best management practices (BMPs).

C. Mining of Other Historical Chemical, Physical, and Biological Data

1. USCB will use the Water Quality Portal to **explore** data sets (NWIS, BioData, Stewards, STORET) for other chemical, physical, and biological parameters in the May River other than fecal coliform. A historical evaluation of some these existing parameters (**e.g., DO and pH**) will be completed if they exist.
2. This type of data analysis may help identify other problematic water quality issues beyond fecal coliform that may affect human health and our natural resources including oysters, shrimp, blue crabs, fish, and bottlenose dolphins.

D. Comparing Historical Data of the May River to Other Watersheds

1. USCB will perform a historical evaluation of **water temperature, fecal coliform, and salinity levels** in the Okatie River, Broad Creek, and Battery Creek, and these changes will be compared to the May River.
2. We understand the importance of performing this work for **all watersheds in Beaufort County** as well as performing comparative analysis to identify what water quality parameters and what watersheds have undergone the most drastic change. However, this detailed analysis is outside the scope of the 2018-2019 work outline. Future work would focus on comparative and statistical analysis of water quality parameters (i.e., fecal coliform, salinity, water temperature, DO, and pH for all watersheds in Beaufort County (i.e., if they exist).

E. Novel Techniques to Monitor Our Natural Resources in the May River

1. *Monitoring Environmental Data.* Since 2013, USCB-MSNL has been monitoring water temperature and depth continuously using HOBO loggers at three stations. Since 2015, USCB-MSNL has been monitoring salinity, pH, and dissolved oxygen bi-monthly at six stations. USCB will continue these measurements.
2. *Monitoring Fish Spawning.* Since 2013, USCB-MSNL has been acoustically monitoring fish spawning aggregations of silver perch, black drum, spotted seatrout, and red drum in the May River. USCB-MSNL will continue to monitor these spawning aggregations and will document any changes in these aggregations.
3. *Monitoring Juvenile Invertebrates and Fish.* In 2016, USCB-MSNL initiated a seining program of tidal pools, creeks, and shorelines in the May River to determine the diversity, yearly abundance, and growth patterns of fish species. USCB-MSNL will continue this seining program and will document any changes in abundance and growth patterns.
4. *Monitoring Bottlenose Dolphins.* In 2015, USCB-MSNL initiated a bottlenose dolphin monitoring program to document changes in seasonal and yearly abundance, distribution, residency, and health of these apex predators in the May River. USCB-MSNL will continue this program and document any changes.

Table 1. Sampling strategy for environmental parameters, invertebrates, fish, and bottlenose dolphin monitoring in the May River, SC.

	No. of Stations	Sampling Frequency	Laboratory Personal
Water temperature and depth	3	Every 20 min	0
Salinity, pH, DO	6	Bimonthly	2
Acoustic sampling	3	Every 20 min	0
Seining	6	Monthly	4
Bottlenose dolphin surveys	NA	Bimonthly	2

Budget

The budget for the 2018-2019 funding cycle is \$30,000 which covers supplies and salary for employees.

Laboratory Contacts:

<u>Title</u>	<u>Name</u>	<u>Contact</u>
Laboratory Director of USCB-MSNL	Dr. Eric Montie	Office: 843-208-8107
Laboratory Director of USCB-WQL	Dr. Alan Warren	Office: 843-208-8338
Laboratory Manager of USCB-MSNL	Agnieszka Monczak	Office: 843-208-8192
Field Manager of USCB-MSNL	Bradshaw McKinney	Office: 843-208-8192
Laboratory Manager of USCB-WQL	Danielle Mickel	Office: 843-208-8193
Water Quality Analyst of USCB-WQL	Michael Monday	Office: 843-208-8193

Historical Analysis of Water Quality and Climate Change Endpoints and Monitoring of Natural Resources in the May River – A Pilot Study for Other Watersheds in Beaufort County



Eric W. Montie, M.S., Ph.D., and Alan Warren, M.P.H., Ph.D.

Departments of Natural Sciences and Health Promotion

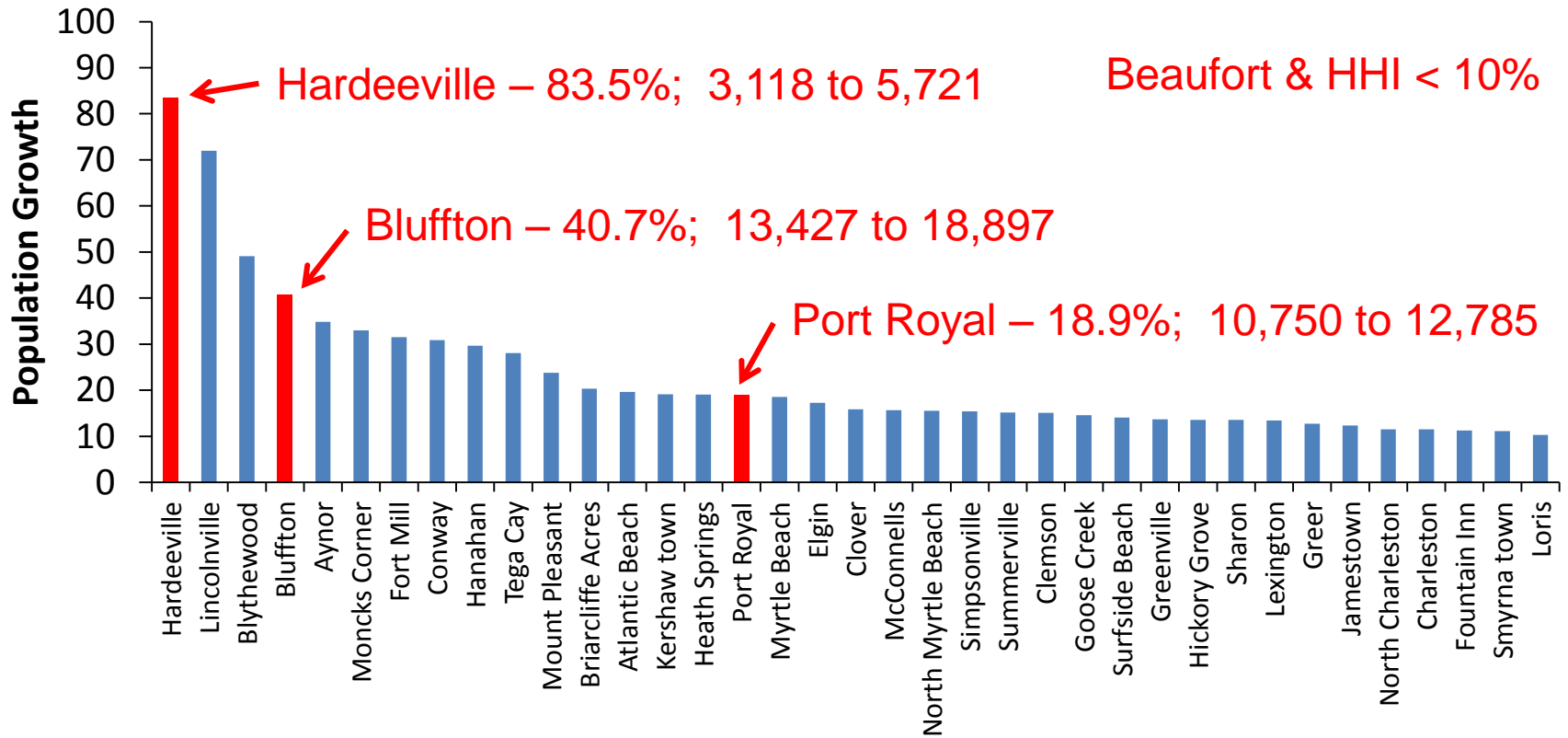
USCB Marine Sensory and Neurobiology Lab

USCB Water Quality Lab

University of South Carolina Beaufort

Hardeeville and Bluffton – Fastest Growing Cities in SC from 2010 to 2016

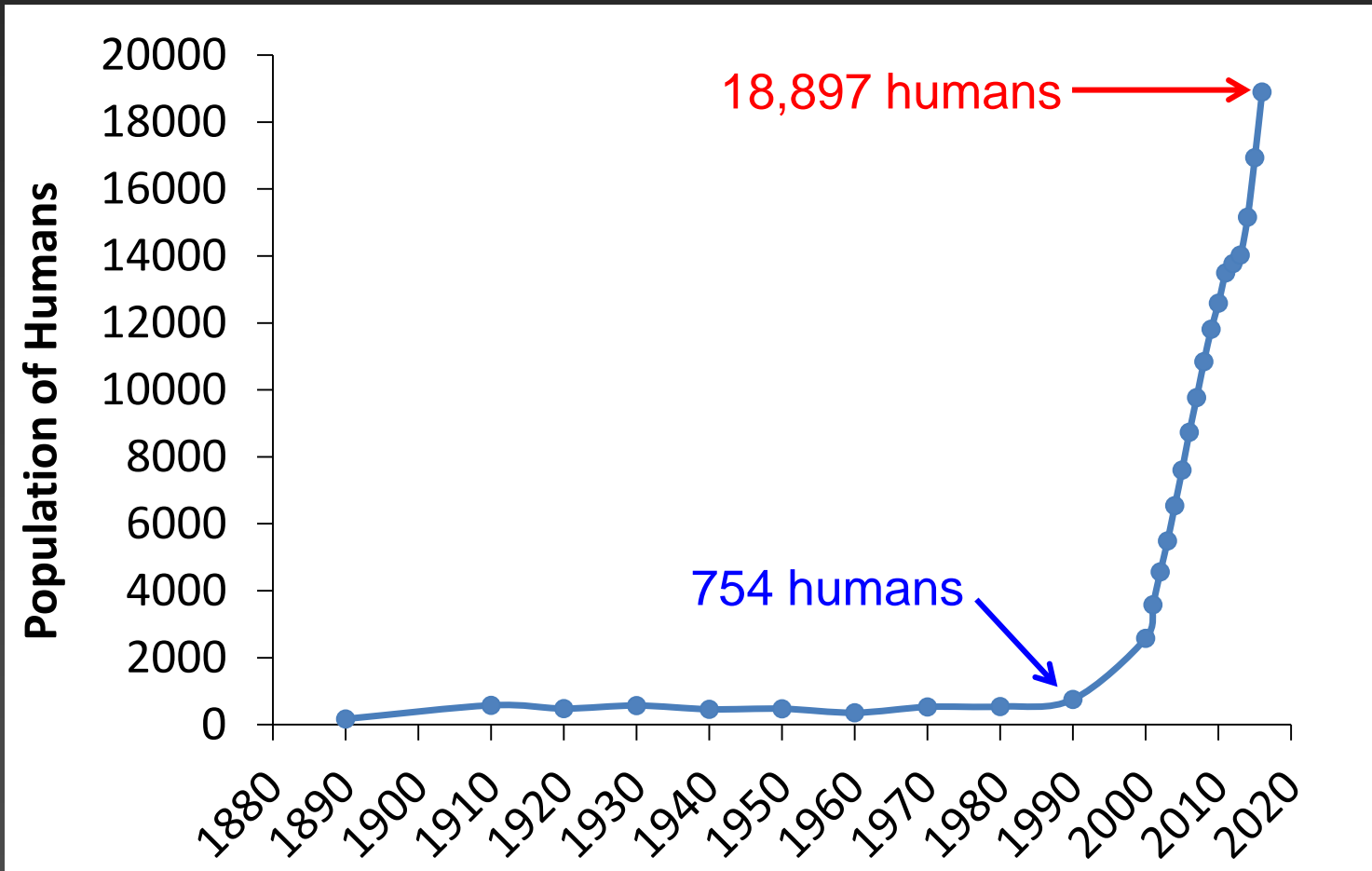
SC Cities with Greater Than 10% Growth Rates



United States Census Bureau

<https://www.census.gov/programs-surveys/popest/data/data-sets.html>

Exponential Growth of Bluffton



United States Census Bureau

<https://www.census.gov/programs-surveys/popest/data/data-sets.html>

Development of May River and Okatie River Watersheds from 1990 to 2016



With Population Growth and Development Comes Increased Stress to the May River

Habitat loss



Fecal coliform pollution



Noise Pollution



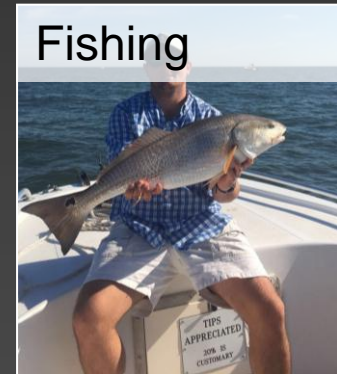
Stormwater runoff



Alteration to shoreline habitat



Fishing



Microplastics



Boat interactions



Pharmaceuticals



Need for Historical Analysis and Long-term Monitoring of Water Quality, Climate Change Endpoints, and Our Natural Resources

Where are we and where are we going?

REVISED MAY RIVER WATERSHED ACTION PLAN:

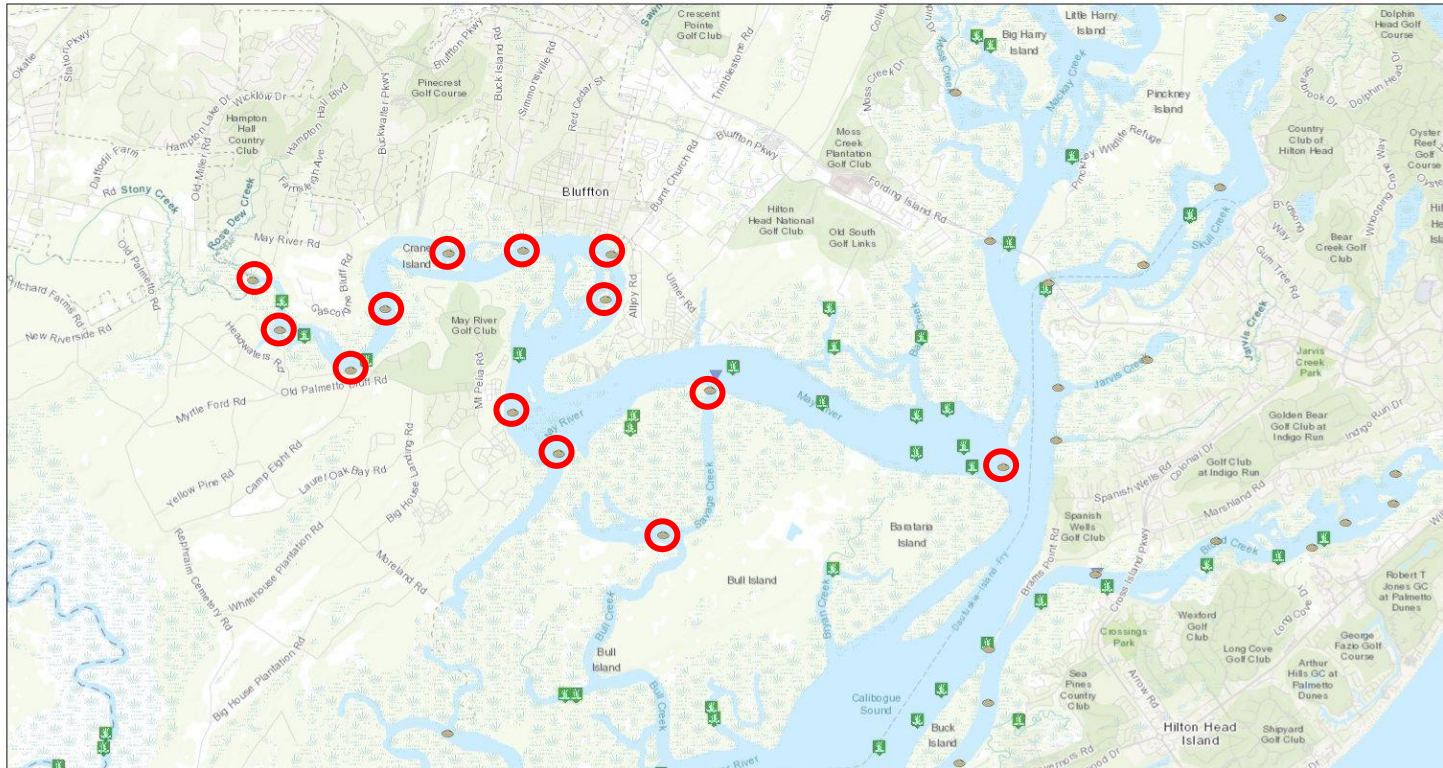
4. Establish new partnerships (e.g., USCB, USGS) to perform in situ long-term monitoring of climate change endpoints such as depth (sea level rise), rainfall, temperature, salinity, conductivity, dissolved oxygen, pH, and possibly chlorophyll and dissolved organic matter.
 - a. Time-series analysis of Fecal Coliform “hot spot” data and Microbial Source Tracking within the May River Watershed.
5. Establish new partnerships (e.g., USCB) to perform long-term monitoring of natural resources in the May River.

Proposed Scope of Work

- A. Historical Analysis of SCDHEC Shellfish Monitoring Data**
- B. Understanding Factors that Influence Fecal Coliform Levels**
- C. Mining of Other Historical Chemical, Physical, and Biological Data**
- D. Comparing Historical Data of the May River to Other Watersheds**
- E. Novel Techniques to Monitor Our Natural Resources in the May River**

A. Historical Analysis of SCDHEC Shellfish Monitoring Data

SCDHEC Monitoring Stations in the May River

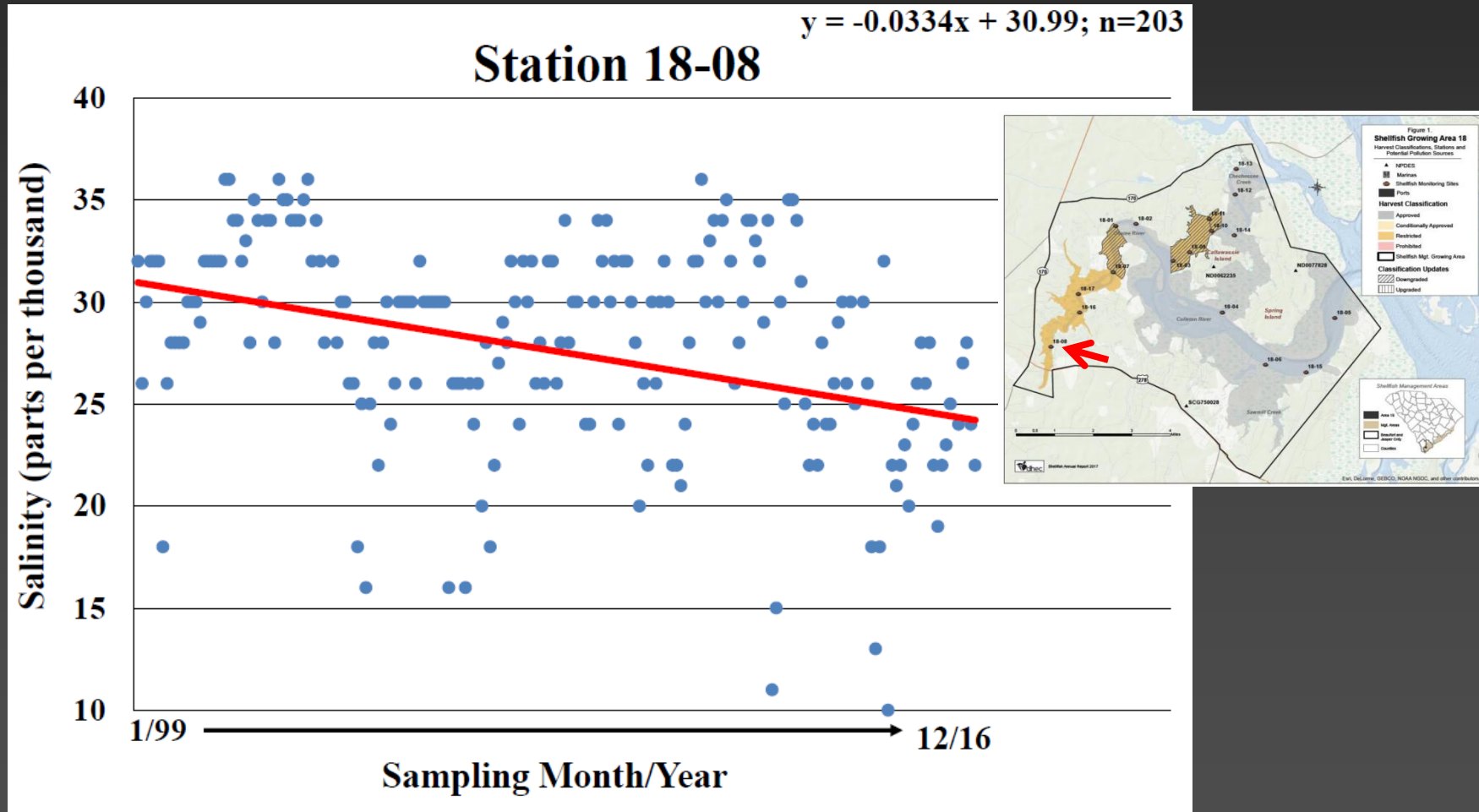


Perform Time Series Analysis from 1999 – 2017:

1. Water temperature
2. Salinity
3. Fecal coliform

A. Historical Analysis of SCDHEC Shellfish Monitoring Data – Okatie River Example

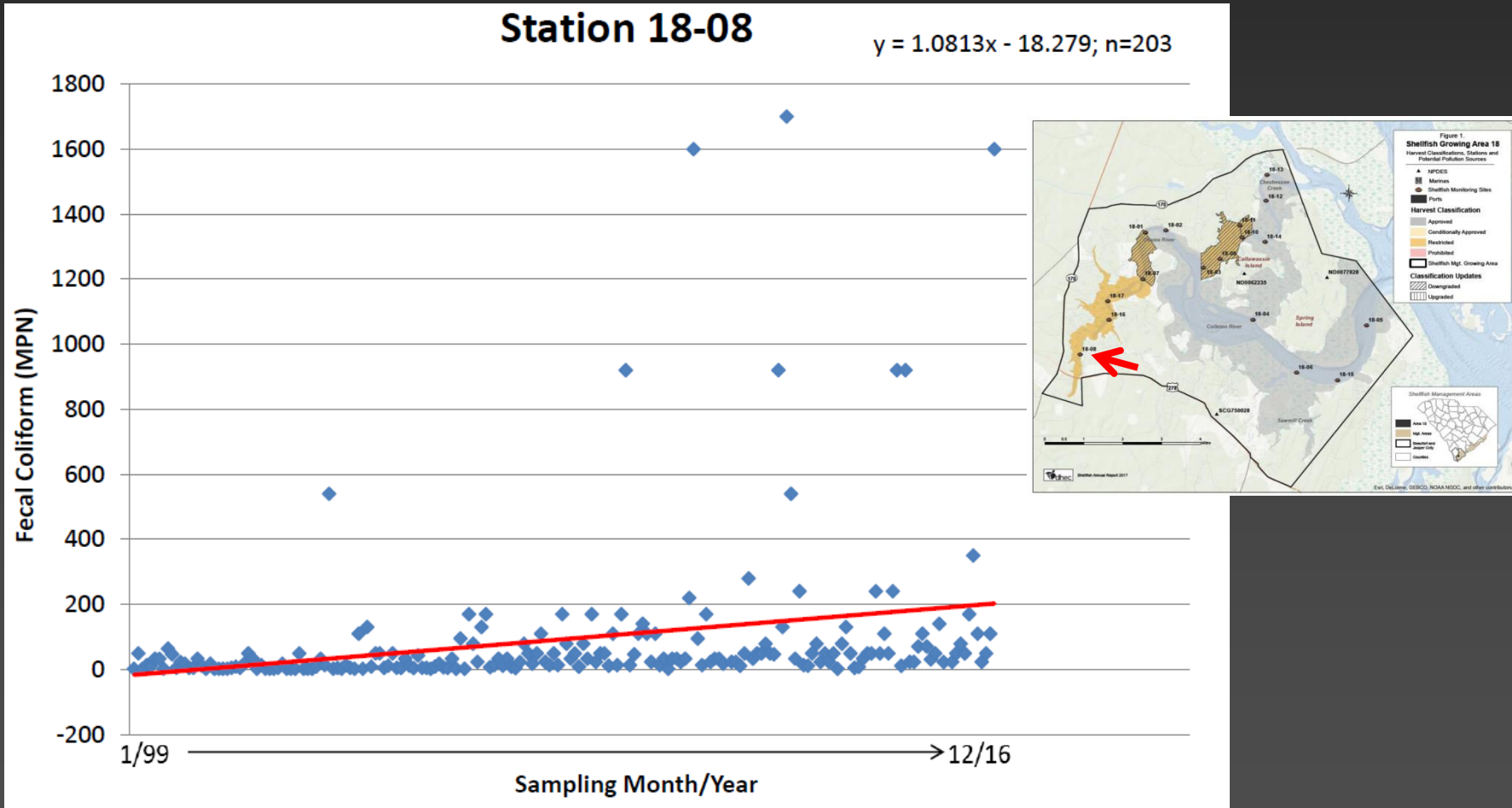
Historical Salinity Data



**Prepared by Alan Warren using SCDHEC Shellfish Monitoring Data.*

A. Historical Analysis of SCDHEC Shellfish Monitoring Data – Okatie River Example

Historical Fecal Coliform Data



**Prepared by Alan Warren using SCDHEC Shellfish Monitoring Data.*

B. Understanding Factors that Influence Fecal Coliform Levels in the May River

Temporal Parameters

- Year
- Season
- Month
- Lunar phase
- Tidal phase

Geographical Parameters

- Sampling station
- Distance from mouth
- Width of river
- Depth



Environmental Parameters

- Water temperature
- Rainfall
- Salinity
- Dissolved oxygen
- pH

Human Parameters

- Population
- Impervious surface
- Forested land
- BMP installments

*Use publicly available data from STORET, NWIS, STEWARDS

C. Mining of Other Historical, Chemical, and Biological Data from the May River

The screenshot shows the homepage of the National Water Quality Monitoring Council (NWQMC) Water Quality Portal. The page features the NWQMC logo and tagline "Working together for clean water". Below the header, there is a section titled "Water Quality Portal" with a description: "The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). It serves data collected by over 400 state, federal, tribal, and local agencies." The main content area is divided into three columns. The left column is titled "DOWNLOAD DATA" and includes a link to "Download water-quality data in Excel, CSV, TSV, and KML formats." The middle column is titled "HOW TO USE THE WQP" and includes links for "User Guide", "Web Services Guide", "FAQs", and "Upload Data". The right column is titled "NATIONAL RESULTS COVERAGE" and includes a link to "Water-quality data in your state." Below this, there is a section titled "ABOUT THE WQP" with links for "What is the WQP?", "Contributing organizations", "Other Water Quality Portals", and "Explore WQP Sites". The footer of the page includes a "Contact us" link and logos for USGS and EPA.

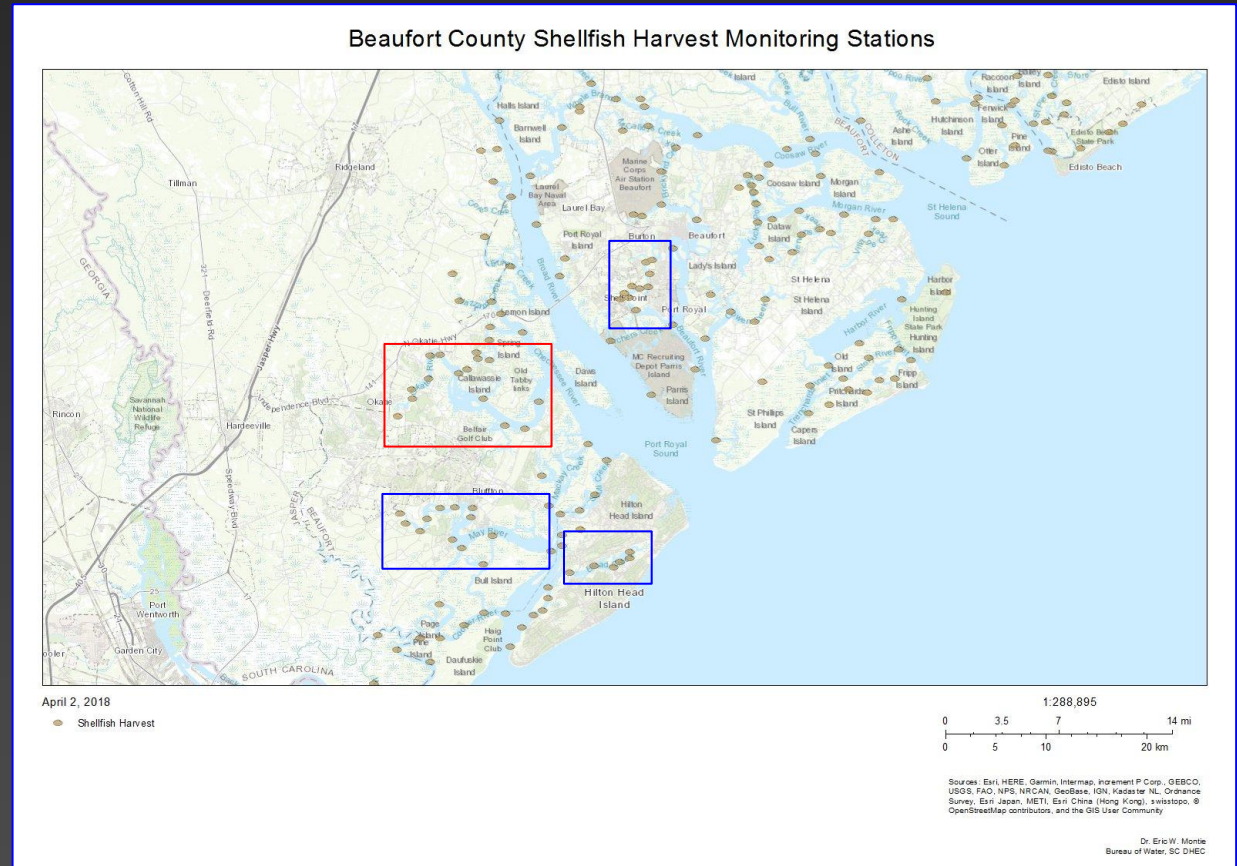
This type of data analysis may help identify other problematic water quality issues beyond fecal coliform that may affect human health and our natural resources including oysters, shrimp, blue crabs, fish, and bottlenose dolphins.

*Use publicly available data from STORET, NWIS, STEWARDS

<https://www.waterqualitydata.us/>

D. Pilot Study - Comparing Historical Data of the May River to Other Watersheds

1. We will perform a historical evaluation of water temperature, fecal coliform, and salinity levels for the Okatie River, Broad Creek, and Battery Creek and compare to the May River.
2. Future work — Analysis of all watersheds in Beaufort County.



*Map created using SC Watershed Atlas <https://gis.dhec.sc.gov/watersheds/>

*Use publicly available data from STORET, NWIS, STEWARDS <https://www.waterqualitydata.us/>

E. Novel Techniques to Monitor Our Natural Resources in the May River

1. *Monitoring Fish Spawning*

- *Seasonal timelines of spawning each year*
- *Total hours of chorusing/yr*



2. *Monitoring Invertebrates and Fish*

- *Diversity*
- *Appearance in the estuary*
- *Abundance*
- *Lengths and seasonal growth curves*



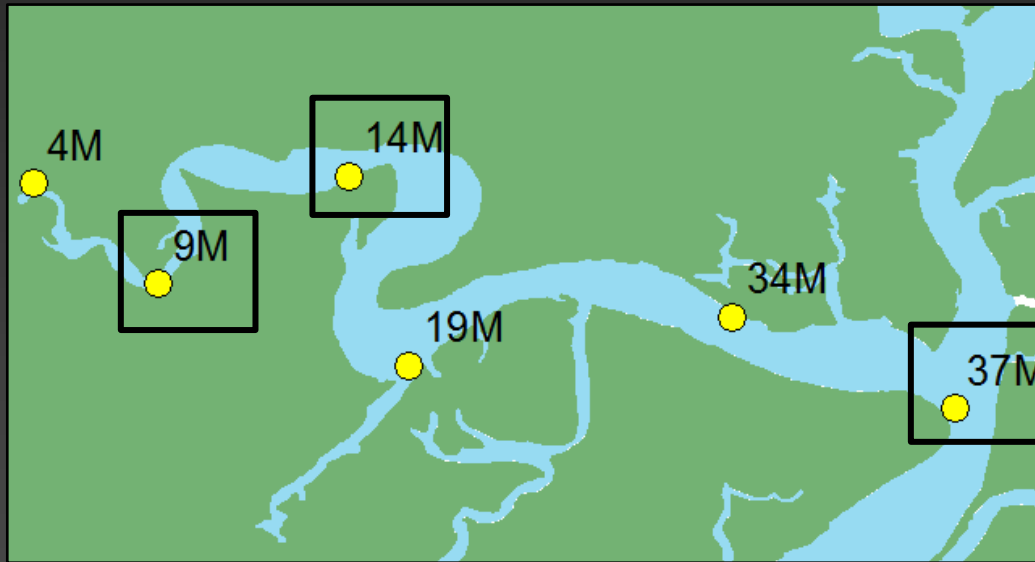
3. *Monitoring Bottlenose Dolphins*

- *Total abundance*
- *Mother/calf pairs*
- *Distribution*
- *Residents vs. migrants*
- *Health*



E. Novel Techniques to Monitor Our Natural Resources in the May River

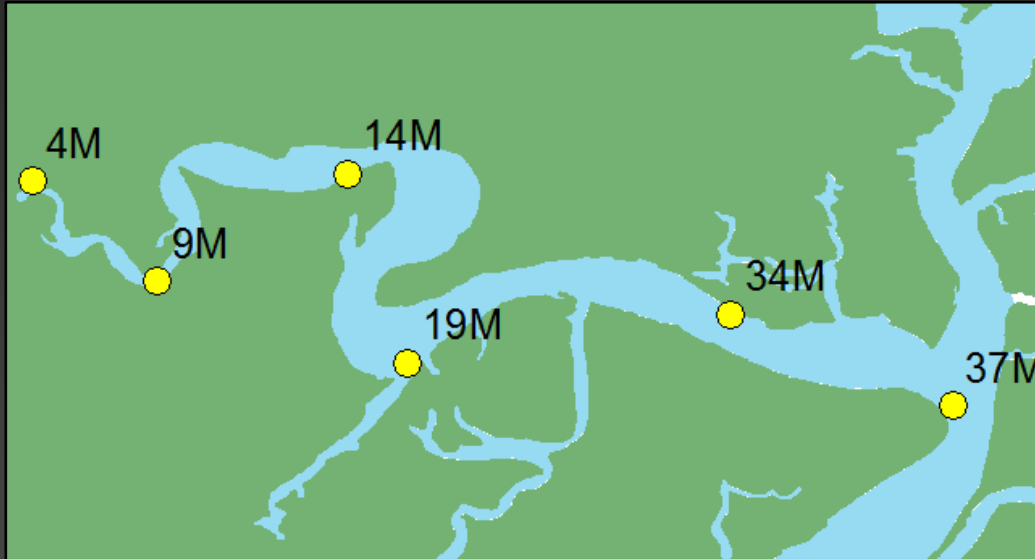
1. Monitoring Fish Spawning – Deployment of Acoustic Recorders



Yellow = bimonthly water quality; **black** = current acoustic stations

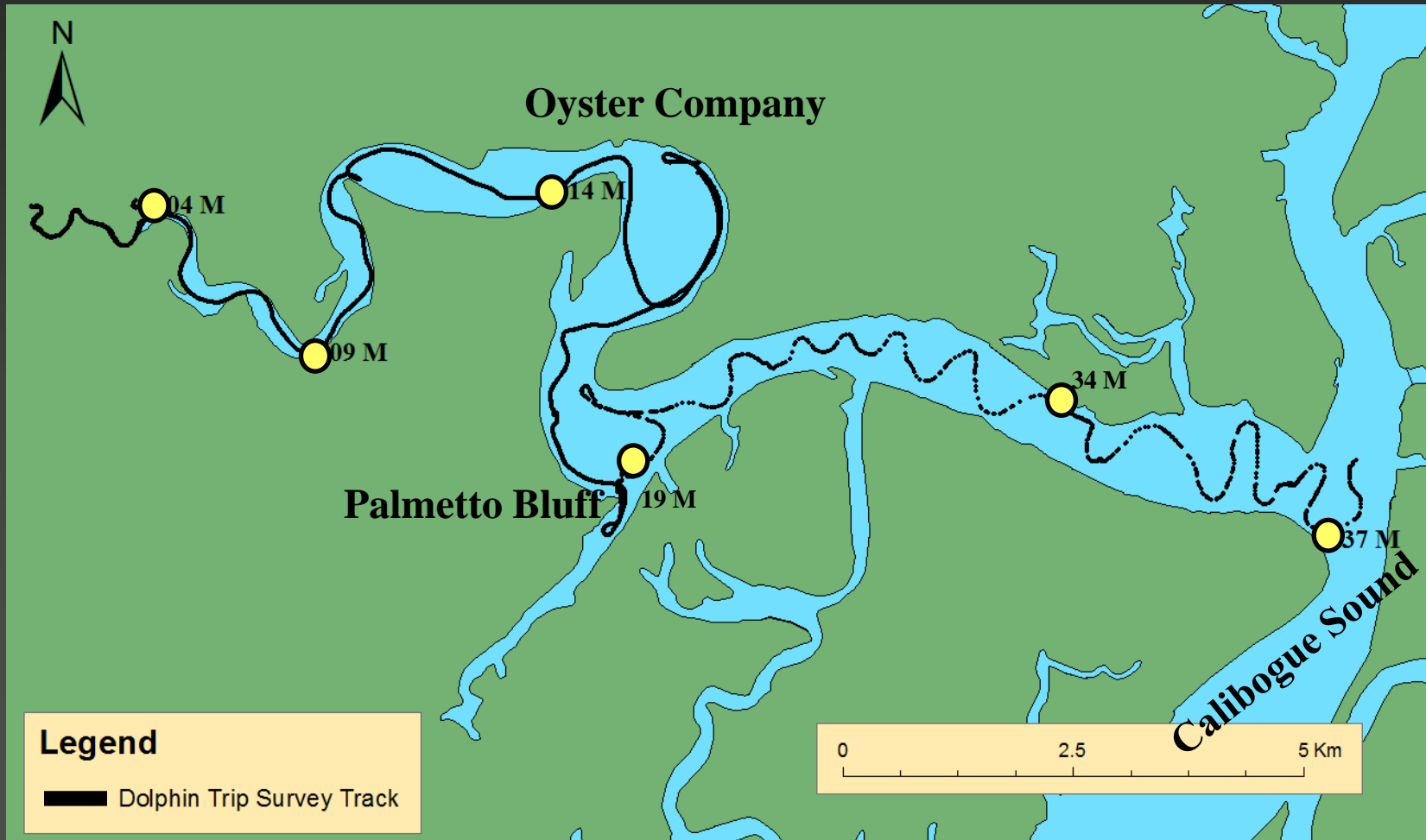
E. Novel Techniques to Monitor Our Natural Resources in the May River

2. Monitoring Invertebrates and Fish – Monthly Seining Surveys



E. Novel Techniques to Monitor Our Natural Resources in the May River

3. Monitoring Bottlenose Dolphin – Bimonthly Boat Surveys



USCB Marine Sensory and Neurobiology Lab



Lab Manager
(Agnieszka Monczak)



Field Manager
(Bradshaw McKinney)



Graduate Students
(Alyssa Marian)

Interns
(Jamileh Soueidan, Eva May)

USCB Students
(Ashlee Seder, Jake Morgenstern, Shaneel Bivek, Austin Roller, Caleb Shedd)

Funding Request for 2018-2019

Budget

USCB-MSNL supplies and salaries for employees \$30,000

- No funding request for USCB-WQL.
- No funding request for Montie salary.



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

May 9, 2018

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Utility Update

1. Southern Lowcountry Regional Board (SoLoCo) –
 - a) Proposals from firms to lead the region through a regional Stormwater standard development were due May 7. Review of proposals and short listing for interviews are pending. The plan is to select a consultant by June 30, 2018.
 - b) The County Council and the Town Council of Bluffton met May 25th to discuss Stormwater management between the two jurisdictions. Both BC and ToB SW staff presented. Discussions focused on beginning the process of creating a regional authority and extension of sanitary sewer within the May River watershed. The joint meetings will continue on a regular basis every two months.
 - c) Jasper County Council invited staff to speak on the topic at their May 7th meeting.
 - d) The City of Beaufort and Town of Port Royal have invited staff to speak on the topic at a joint workshop in June. Date is TBD.
2. Regionalization – See SoLoCo update.
3. FY 19 Budget – Approval of the management fee for TY 18 by the municipalities has been received for three of the four entities. The deadline was April 1. Finance Committee took action on the Stormwater budget ordinance at their May 7th meeting. County Council will have a budget adoption ordinance in May and June.
4. Gaffney, SC - The City is considering a Stormwater utility. Beaufort County staff has been invited to present on our utility at a workshop on May 18th.
5. Special projects – Staff has begun research on the various topics provided by the Board for future meetings:
 - a) SWU Fees and federal properties – This will be presented in Executive Session at today's meeting.
 - b) Superfunds sites – DHEC staff have agreed to present in June.
 - c) DHEC Shellfish monitoring results for 2017 – DHEC staff have agreed to present in July.
 - d) County Convenience Center (Drop off Center, or DOC) Facility Plan – staff is still preparing the document. Date for presentation TBD

Monitoring Update

1. Lab Update (From Dr. Alan Warren and Lab Manager Danielle Mickel)
 - a) Beaufort County:
 - i. Finished sample collection for second quarter of second year for MS4.
 - b) USCB Lab:
 - i. Lab moves forward to serve in the same capacity as prior to Michael Monday's resignation.
 - ii. Annual proficiency testing is complete with passing of all analytes.
 - iii. Monthly (and as needed) calibration of equipment and instruments.
 - iv. Exploration of new TKN method approved for state certification.
 - v. Certification Upkeep-including review of QA/QC, logbooks, COC's.
 - vi. On-going efforts to obtain additional certification; no new certs obtained during this Qtr.
 - vii. Monthly sterility checks on Lab water for TOC, TRC, HPC, Conductivity, metals.
 - viii. Learning new software for laboratory management systems.
 - ix. Account tracking for all accounts-expenditures, deposits, ledgers, PO's
 - x. Logistics, planning, scheduling of all activities.
 - xi. Procurement of all required materials, supplies and equipment.
 - c) Town of Bluffton:
 - i. Continue with weekly sample analysis.
 - ii. Additional weekly nutrient (T-N, T-P) parameter analysis for NRP-pond site.
 - iii. 2nd Qtr MS4 has started.
 - d) Palmetto Bluff:
 - i. Revision for new MOU to continue sampling and analyses for 6 wet and 6 dry events.
 - ii. Data reduction/reporting.
 - e) GEL-HHI:
 - i. Analysis for Hilton Head Island E.coli samples 4x/Qtr, including data reduction/reporting.
2. Monitoring Plan updates - County staff and Lab staff met May 4th to discuss expanded monitoring plan needs.

Stormwater Implementation Committee (SWIC) Report

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

Stormwater Related Projects

1. Okatie West / SC 170 Widening Retrofit (Construction = \$993,048, CO#1 Design \$8,000) Construction has ongoing. The Bold and Gold experimental site add-on is being considered by the contractor. The project is on schedule for a July 31, 2018 completion.

2. Easements – Staff is working on numerous easement requests and meets monthly to review status. Staff and County Council member York Glover met several property owners on site to resolve easement concerns. County Council members Gerald Dawson and York Glover have been working with staff and are now ready to request a recommendation for condemnation from the Board. Several projects will be discussed during old business during today’s meeting. (Jenkins Road, Pine Grove Road, Bessie Lane / Young Circle)

Professional Contracts Report

1. CIP FY 18 Grouping Stormwater Projects – (Design - Ward Edwards \$202,000, Andrews Engineering \$560,490, Const. est. \$5,512,900) – All projects are in early design phase. No additional update at this time.

Regional Coordination

1. Factory Creek Watershed Regional Detention Basin “Phase I” & Academy Park Subdivision (Design Cost \$49,873, Tree Mitigation Cost \$18,200 & \$18,200, Construction Cost by the Developer) – Construction is ongoing.
2. Factory Creek Watershed Regional Detention Basin “Phase II” (Design Cost = \$63,390, Tree Mitigation Cost is pending, Construction Cost by the Developer) – Final stage is under construction. No new updates.
3. Town of Bluffton and Beaufort County Joint meeting – See Utility Update.
4. Mossy Oaks Task Force – See Municipal Reports.
5. Graves Property / Pepper Hall Public / private partnership – Staff will be meeting on site May 10th to review multiple site concerns. Staff will report back to the committee on May 15th.
6. SESWA Fall Conference – October 3-5, 2018 at the Marriott Convention Center, Palmetto Dunes, Hilton Head Island, SC. This conference is not limited to SESWA members. Any Board member or member of the development community that wants to attend, should go to www.seswa.org and watch for registration information. Beaufort County staff had two papers submitted for presentation at the conference. Hilton Head Island staff are working with SESWA to conduct a local Stormwater project tour during the first day of the conference.
7. Charleston area MS4 group – County staff were invited to participate in a staff group, similar to our SWIC, to discuss MS4 implementation issues. At the April 18th meeting, the renewal of the statewide construction general permit renewal was discussed.

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. Mossy Oaks Task Force – We had a Mossy Oaks meeting at 9am on Friday, April 6, 2018 at the City of Beaufort City Hall (1911 Boundary Street, Beaufort SC 29902) in the planning conference room. This Task Force meeting was intended to provide an update on the status and progress of the project and the path forward. Attached is a copy of the presentation. Some brief highlights of the meeting included:
 - a. On February 13th 2018- Beaufort City Council approved expenditure of \$236K for the phase I (Engineering Analysis).
 - b. March & April – Currently applying for Community Development Block Grant (CDBG) for Basin 2.
 - c. April – currently collecting data for basins 1 & 2.
 - d. Confirmed commitment from Beaufort County in Fiscal Year 2018 of \$5000 for phase I Engineering Analysis. Planned commitment from Beaufort County of an additional \$15,404 for Fiscal Year 2019 for phase I Engineering Analysis which would cover Beaufort County (and the Beaufort County School District) cost share portion.
 - e. Confirmed commitment from Town of Port Royal in Fiscal Year 2018 for \$15,000 for phase I Engineering Analysis.
 - f. Confirmed commitment from the City of Beaufort in Fiscal Year 2018 for \$216,000 for phase I Engineering Analysis.
 - g. Tentative commitment from South Carolina DOT in Fiscal Year 2018 for \$25,000 for phase I Engineering Analysis. Currently the City of Beaufort and SC DOT are finalizing the administrative portion of this commitment.
 - h. Currently the City of Beaufort and the Town Port Royal is collecting any data available to support a Community Block Grant (CDBG). Data requested is any claims, photographs and testimonials. Additionally, any comments that support the improvements for the Mossy Oaks drainage basins would be extremely beneficial as well. Please see attached flyer that we will be distributing via door to door, email correspondence and social media outlets.
 - ii. No additional 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.

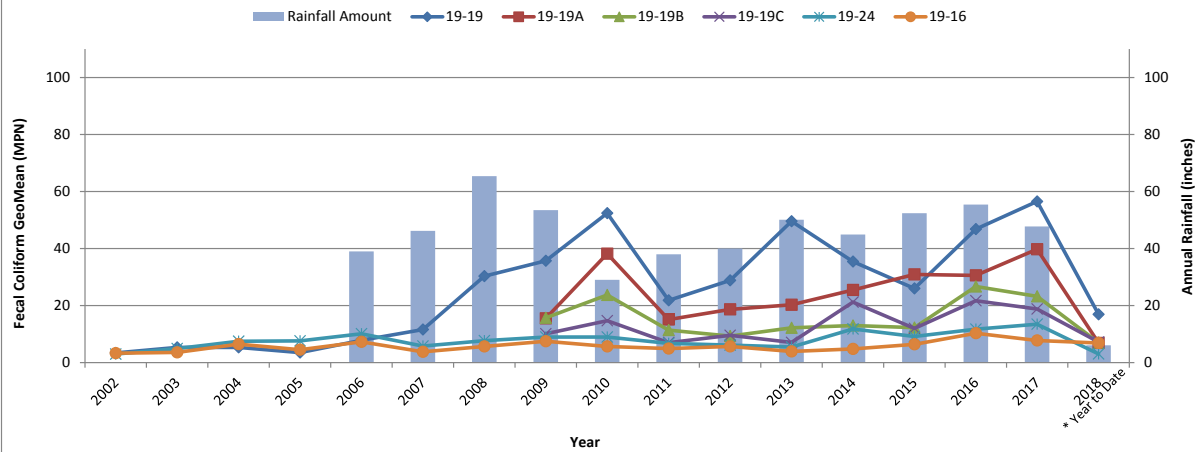
MS4 Report

1. Plan Review – [See the attached chart](#) for Beaufort County Stormwater staff plan review workload for the past 12 months.
 - a) Transition for plan review by consultant to Community Development Staff is ongoing. Stormwater staff has been providing training to CDD staff to make this happen.
2. Stormwater Permits – [See the attached chart](#) for Beaufort County Stormwater permits issued for the past 12 months.
3. Monthly Inspection summary - [See the attached chart](#) for Beaufort County Stormwater staff inspection, complaint, IDDE, and violations summary for the past 12 months.
4. Public Education – Lowcountry Stormwater Partners (LSP), via Carolina Clear, continues to work on several initiatives towards public education and outreach. No additional information was available at the time of this report.
5. Construction permitting –
 - a) Staff from the County, Bluffton, and Hilton Head Island will be meeting with DHEC staff in Charleston to receive direction from DHEC on construction permitting needs. DHEC staff will then be coming to Beaufort County to conduct training for home builders, designers, etc. to again explain the permit requirements and process. No date has been set.
 - b) Staff has met one-on-one with several local builders and engineers to discuss permitting requirements.
6. MCM6 – Facility plan for Drop Off Centers – Consultant Beth McLaughlin continues to work on a proposed upgrade plan for the county DOC to make them compliant with pollution prevention as defined in our BMP Manual.
7. Monitoring plan update – Consultant Beth McLaughlin also continues to work on an expansion of our monitoring plan to incorporate TMDLs in the Chechessee River and Beaufort River.
8. MS4 Statewide General permit – No update at this time.
9. Statewide General permit for Construction – No update at this time.
10. E-permitting – DHEC will be rolling out e-permitting with the NOI for the MS4 permit in May. No update at this time.

	19-19				19-19A				19-19B				19-19C				19-24				19-16			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
	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	110.0	79.0	1600.0		33.0	23.0	920.0		27.0	49.0	540.0		7.8	33.0	240.0		6.8	7.8	220.0		4.5	23.0	49.0	
November	NS	33.0	49.0		NS	13.0	33.0		NS	7.8	7.8		NS	14.0	31.0		NS	13.0	2.0		NS	33.0	2.0	
October	23.0	NS	22.0		49.0	NS	49.0		4.5	NS	33.0		23.0	NS	23.0		7.8	NS	6.8		4.5	NS	2.0	
September	46.0	23.0	17.0		17.0	110.0	7.8		9.3	23.0	11.0		17.0	13.0	4.5		23.0	4.5	2.0		4.5	7.8	1.8	
August	6.8	NS	79.0		17.0	NS	70.0		13.0	NS	21.0		13.0	NS	33.0		24.0	NS	33.0		4.0	NS	33.0	
July	17.0	79.0	350.0		7.8	17.0	110.0		6.8	22.0	130.0		11.0	17.0	49.0		2.0	49.0	49.0		4.5	13.0	22.0	
June	33.0	79.0	23.0		46.0	130.0	49.0		11.0	70.0	13.0		14.0	110.0	17.0		4.5	33.0	7.8		11.0	23.0	4.5	
May	NS	70.0	17.0		NS	23.0	23.0		NS	49.0	7.8		6.8	49.0	2.0		6.8	14.0	23.0		23.0	17.0	4.5	
April	1.8	23.0	7.8		33.0	23.0	23.0		17.0	13.0	4.5		17.0	13.0	7.8		13.0	7.8	13.0		17.0	1.8	4.5	
March	170.0	33.0	350.0	22.0	130.0	33.0	11.0	21.0	49.0	33.0	33.0	4.5	17.0	17.0	13.0	11.0	13.0	11.0	13.0	7.8	6.8	7.8	33.0	9.3
February	13.0	23.0	13.0	17.0	14.0	17.0	7.8	7.8	1.8	13.0	13.0	17.0	1.8	11.0	9.3	17.0	7.8	6.8	4.5	2.0	2.0	1.8	1.8	7.8
January	79.0	110.0	95.0	13.0	79.0	33.0	79.0	2.0	49.0	49.0	31.0	4.5	33.0	17.0	49.0	2.0	17.0	7.8	27.0	1.8	7.8	17.0	33.0	4.5
Additional Samples																								
Average Annual GeoMean	26.0	46.8	56.5	16.9	30.9	30.6	39.8	6.9	12.3	26.7	23.3	7.0	12.0	21.7	18.8	7.2	9.2	11.7	13.5	3.0	6.4	10.3	7.7	6.9
** Truncated GeoMetric Mean	37.0	37.0	44.0	142.0	21.0	30.0	36.0	31.0	11.0	16.0	20.0	22.0	11.0	16.0	16.0	17.0	7.0	9.0	10.0	9.0	4.0	6.0	7.0	7.0
** Truncated 90th Percentile	205.0	105.0	203.0	712.0	95.0	89.0	133.0	151.0	51.0	69.0	83.0	91.0	55.0	65.0	57.0	69.0	30.0	29.0	37.0	45.0	13.0	21.0	29.0	31.0

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

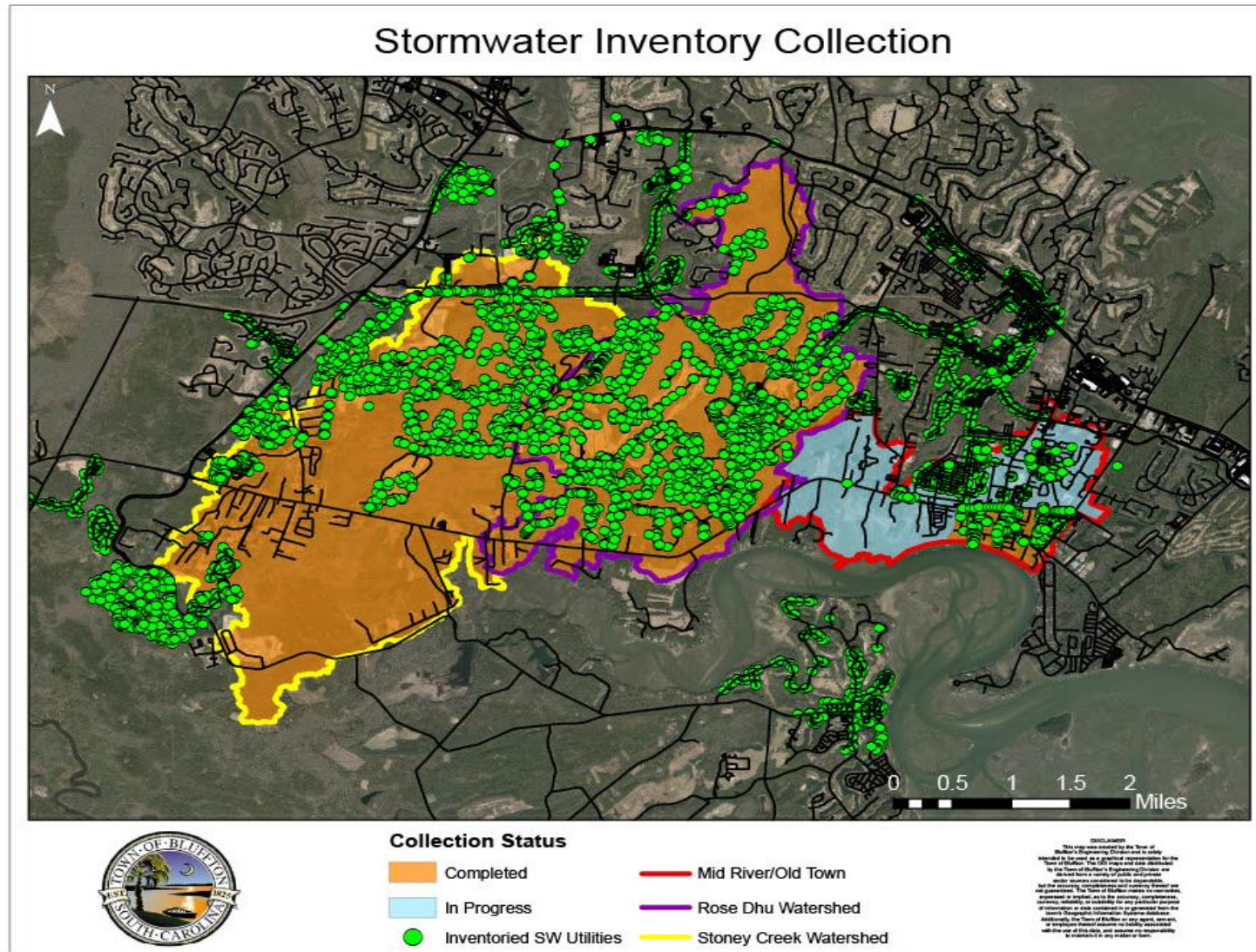
SC DHEC Shellfish Monitoring Stations Average Annual Fecal Coliform



ACTIVITY - POLICY	STATUS
<p>May River Watershed Action Plan Update (Grant award of \$55,000 in 2017)</p>	<p>To be completed with direction and input from staff, the public, Water Quality Technical Advisory Committee, May River Watershed Advisory Committee, and Town Council. Action Plan Update is a FY19-20 priority of WAPAC and Council. WAPAC scope direction provided 2/22/18 to include of watershed health indicators including bacteria, biotic/abiotic parameters and social/cultural/economic indicators. Staff met with SCDHEC to confirm hybrid 5R and traditional watershed-based plan approach will be accepted.</p>
<p>Sewer Connection & Extension Policy</p>	<p>Council adopted the Sewer Connection & Extension Policy on 9/26/17. WAPAC proposed prioritization phases for sewer extension in Historic District for FY 19-23 and recommended revisions to Sewer Connection Ordinance on 2/22/18. Staff has initiated septic system maintenance education via personally and with Lowcountry Stormwater Partners. Town Council considered WAPAC recommended amendments to Sewer Connection Program on 4/10/18. Will consider for 2nd & Final Reading on 6/12/18 along with Septic to Sewer Conversion Program from WAPAC.</p>
ACTIVITY - PROJECTS	STATUS
<p>Sanitary Sewer Extension</p>	<p>Buck Island/Simmonsville Road (BIS) Phases I, II, III and IV are completed. Toy Fields is completed. Six phases of sewer extension are proposed in the 5-year Capital Improvement Program. Current project updates are included in Engineering Consent Agenda under "Sewer & Water."</p>
<p>May River 319 Grant Phase 1 - New Riverside Pond (Grant award of \$483,500 in 2009)</p>	<p>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 reduction. Downstream failing septic system was located by Staff and reported to County & SCDHEC for remediation.</p>
<p>May River 319 Grant Phase 2 - Pine Ridge (Grant award of \$290,000 in 2011)</p>	<p>Completed in 2016. In post-construction monitoring phase to assess project efficacy.</p>
<p>May River 319 Grant Phase 3 - Town Hall Parking Retrofit (Grant award of \$231,350 in 2016)</p>	<p>Staff a workplan amendment for this grant award to include stormwater retrofits at Town Hall was approved by SCDHEC & EPA . Current project updates are included in Engineering Consent Agenda.</p>
<p>Stoney Creek Wetlands Restoration: Preliminary Design Phase</p>	<p>Wetlands restoration project with the goal to reduce stormwater volume reaching the May River. Conceptual design completed and approved by property owners. Current project updates are included in Engineering Consent Agenda.</p>
<p>May River Watershed Water Quality Model</p>	<p>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. Staff is re-evaluating this project having received County Master Plan Update in April 2018.</p>

ACTIVITY - FINANCIAL	STATUS
Additional Funding Opportunities	Exploring partnership opportunities with BJWSA for future sewer phases. WAPAC FY19-20 priority to assess Stormwater Utility Fee structure to support initiatives.
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 4.
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 5a.
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, 5b, 5c, and 5d.
Construction Site Stormwater Runoff 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 6.
Stormwater Plan Review & Related Activity Program (MS4 Minimum Control Measure #5)	SCDHEC delegated plan review-related activities. Current updates are included in Engineering Consent Agenda Attachment 7.
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. Current updates are included in Engineering Consent Agenda Attachment 8 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 9.
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 FY19 Budgeting Process. Sewer Connection Ordinance changes anticipated 6/10/18. Septic to Sewer Conversion Program will be for Council's review on 6/10/18.

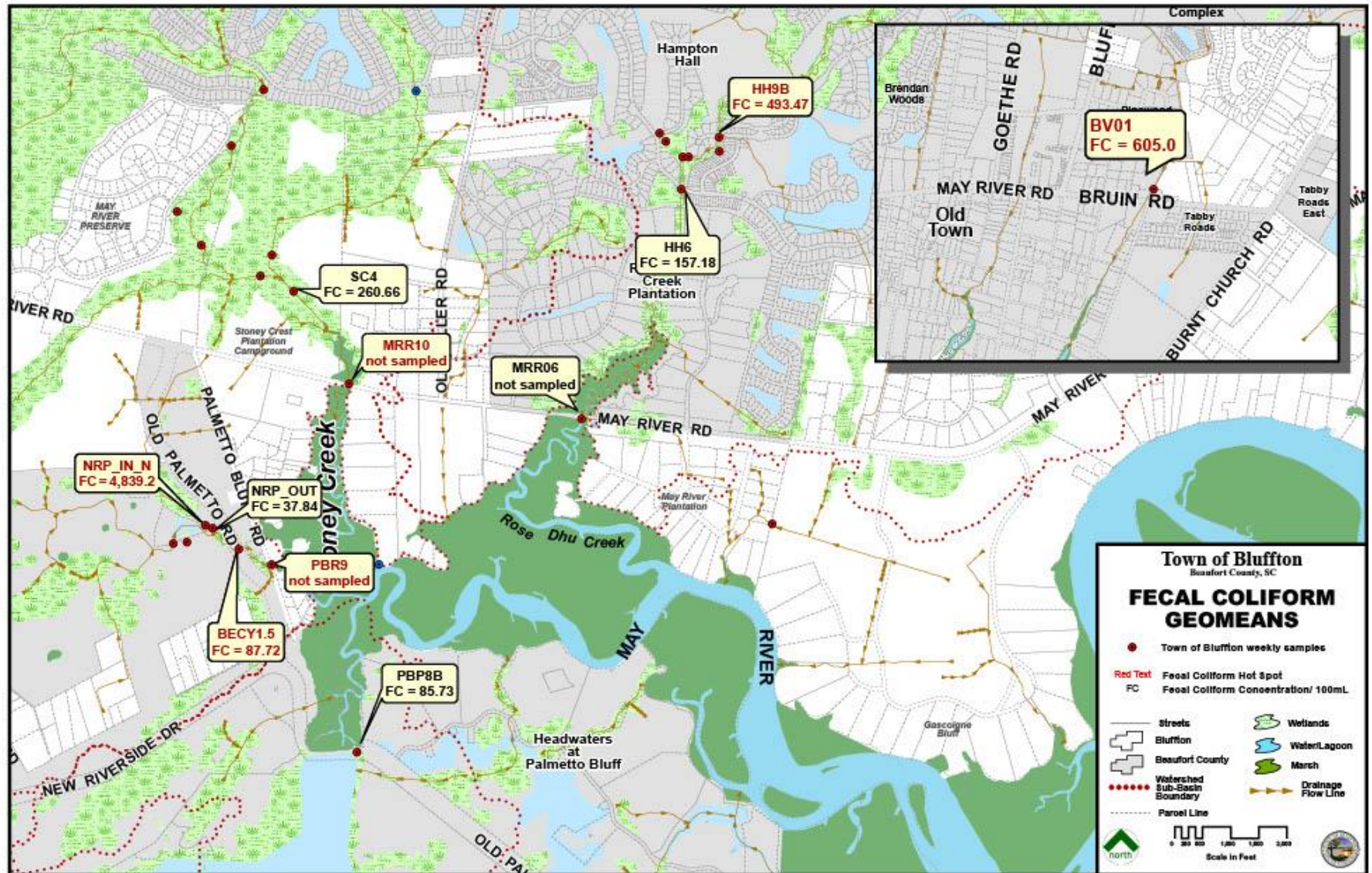
MS4 Minimum Control Measure #3 – IDDE (Illicit Discharge Detection & Elimination): Stormwater Infrastructure Inventory



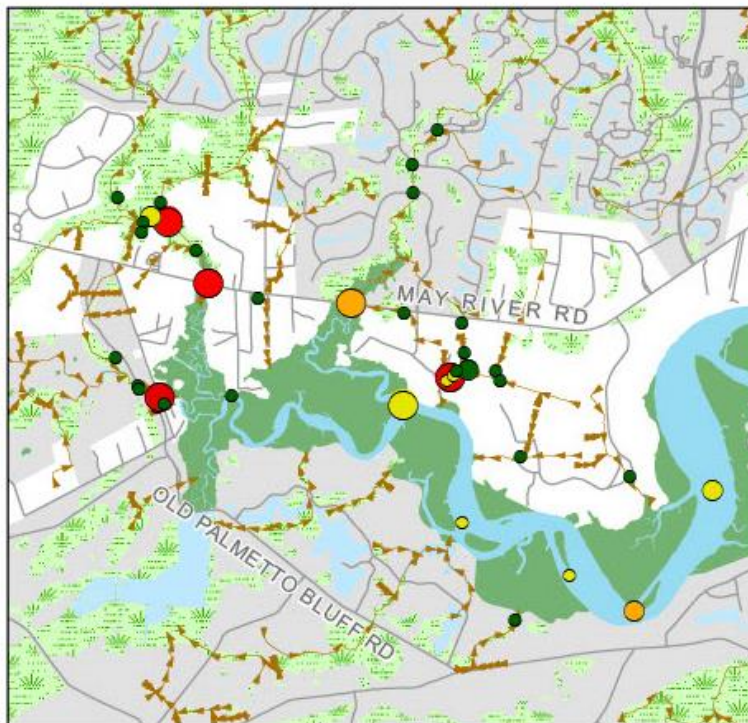
Stormwater Infrastructure Inventory Collection Status

FY 2018 YTD Collection Totals	3,324
FY 2017 Collection Totals	3,874

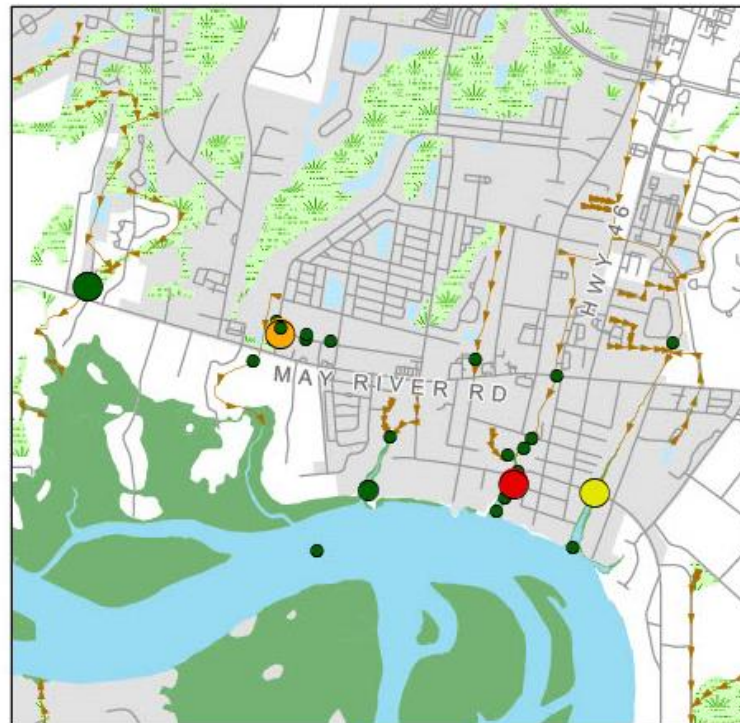
MS4 Minimum Control Measure #3 – IDDE: Fecal Coliform Concentrations Trend Map



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

MST Sampling Sites



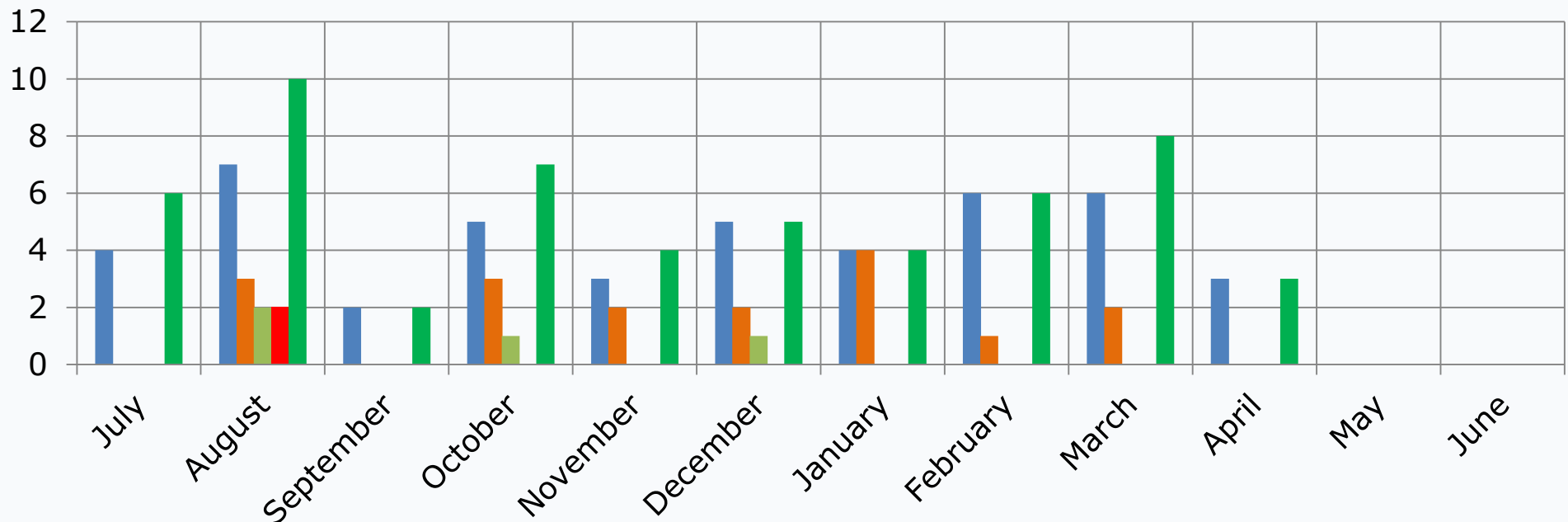
Updated: 03/19/2018

THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. DATE OF REVIEW: 03/19/2018. AUTHORITY: 48 CFR 1.101-11.6. CONTACT: [unreadable]



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

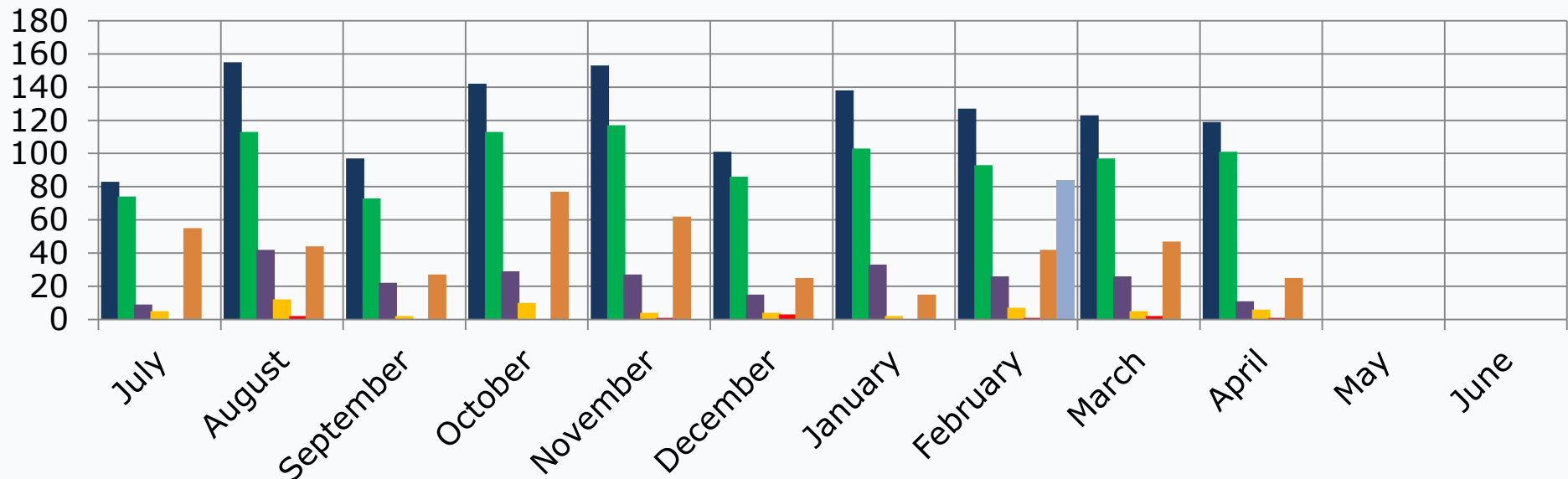
- Number of Illicit Discharge Investigations
- Notice To Comply
- Meetings
- Notice of Violation
- Notice of Violation Resulting in Fines



	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	45	17	4	2	55
FY 2017 Totals	50	19	8	13	67

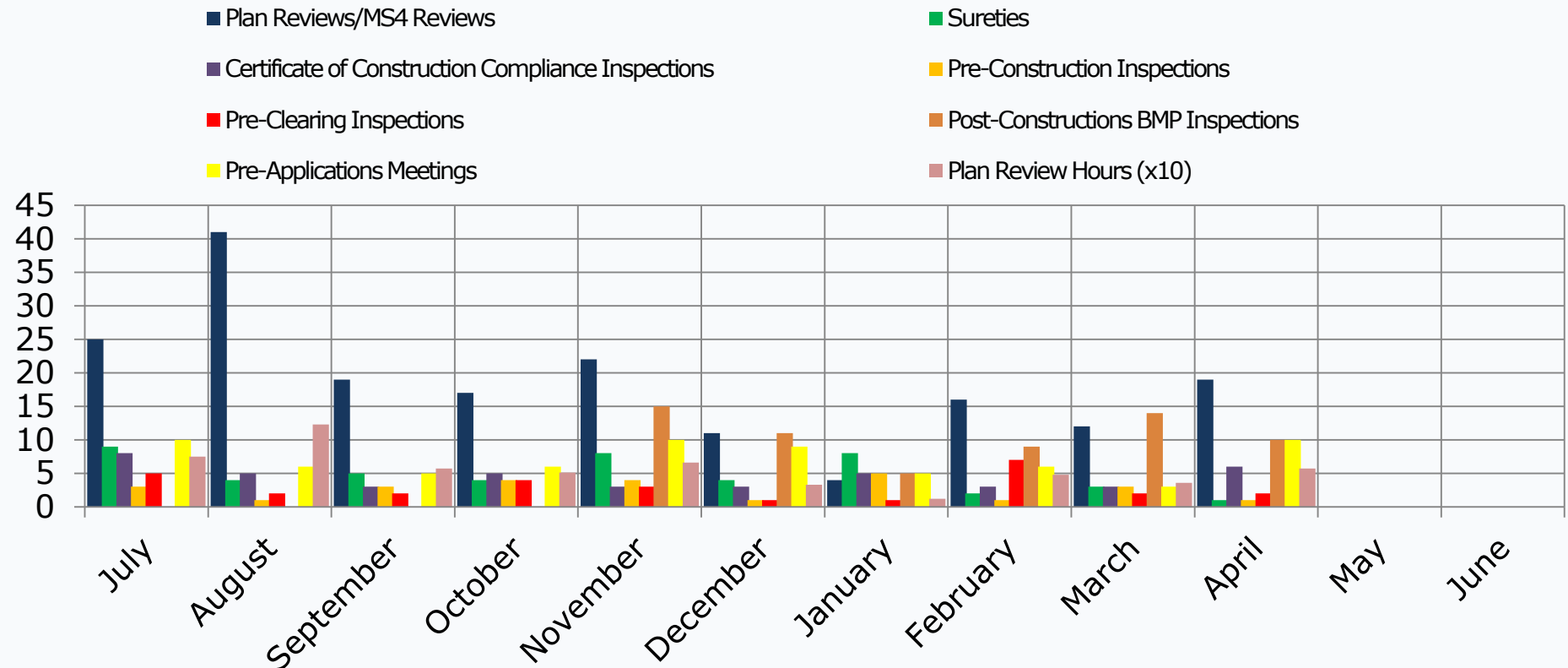
MS4 Minimum Control Measure #4 - Construction Site Stormwater Runoff Control

- 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



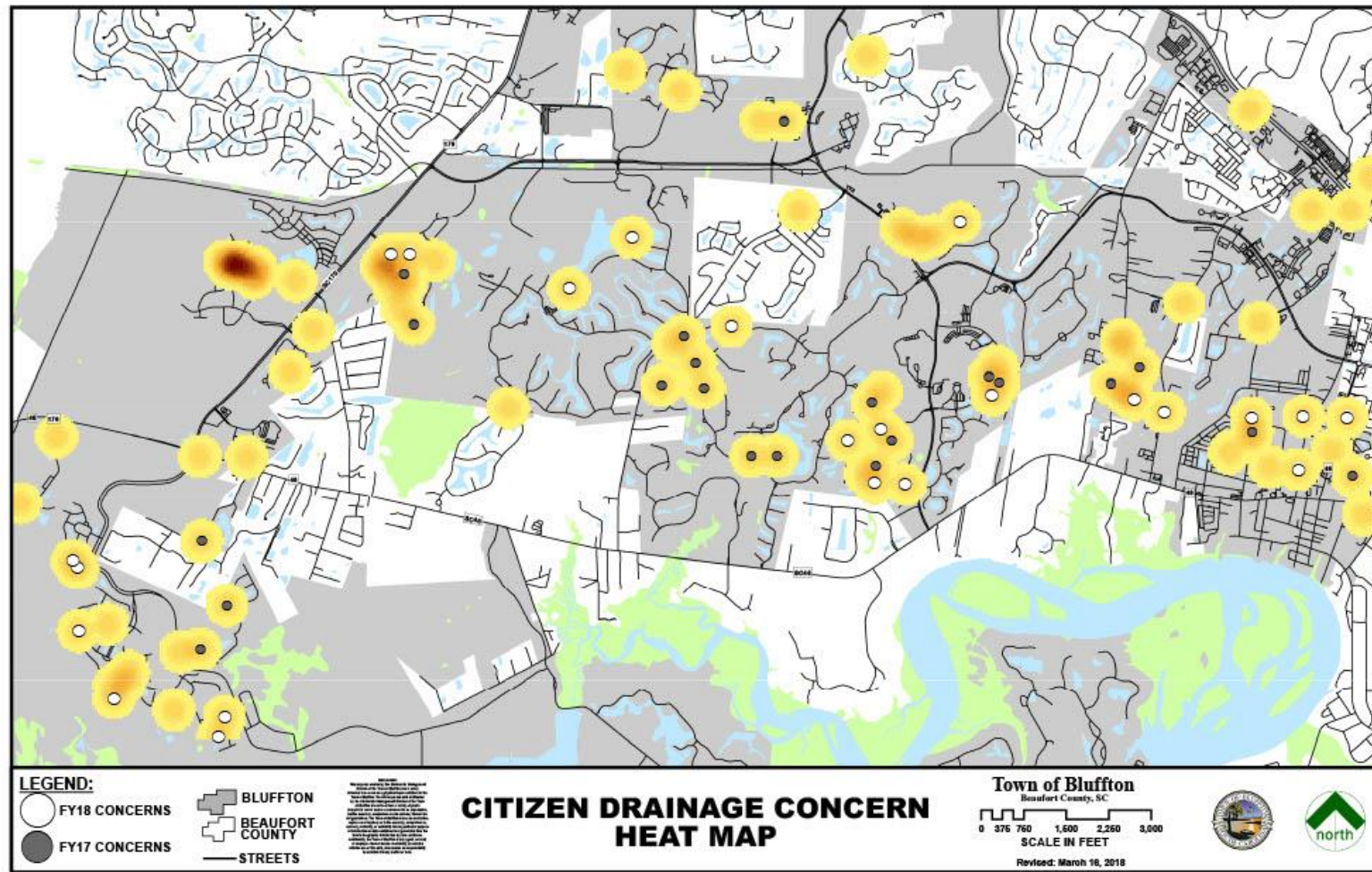
	Number of Sediment & Erosion Control Inspections	Number of Inspections Passed	Number of NTC Issued	Number of NOVs Issued	Number of NOV Enforcement Actions	Number of E&SC Meetings
FY 2018 YTD Totals	1,238	970	240	57	10	419
FY 2017 Totals	1,219	862	233	58	10	237

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



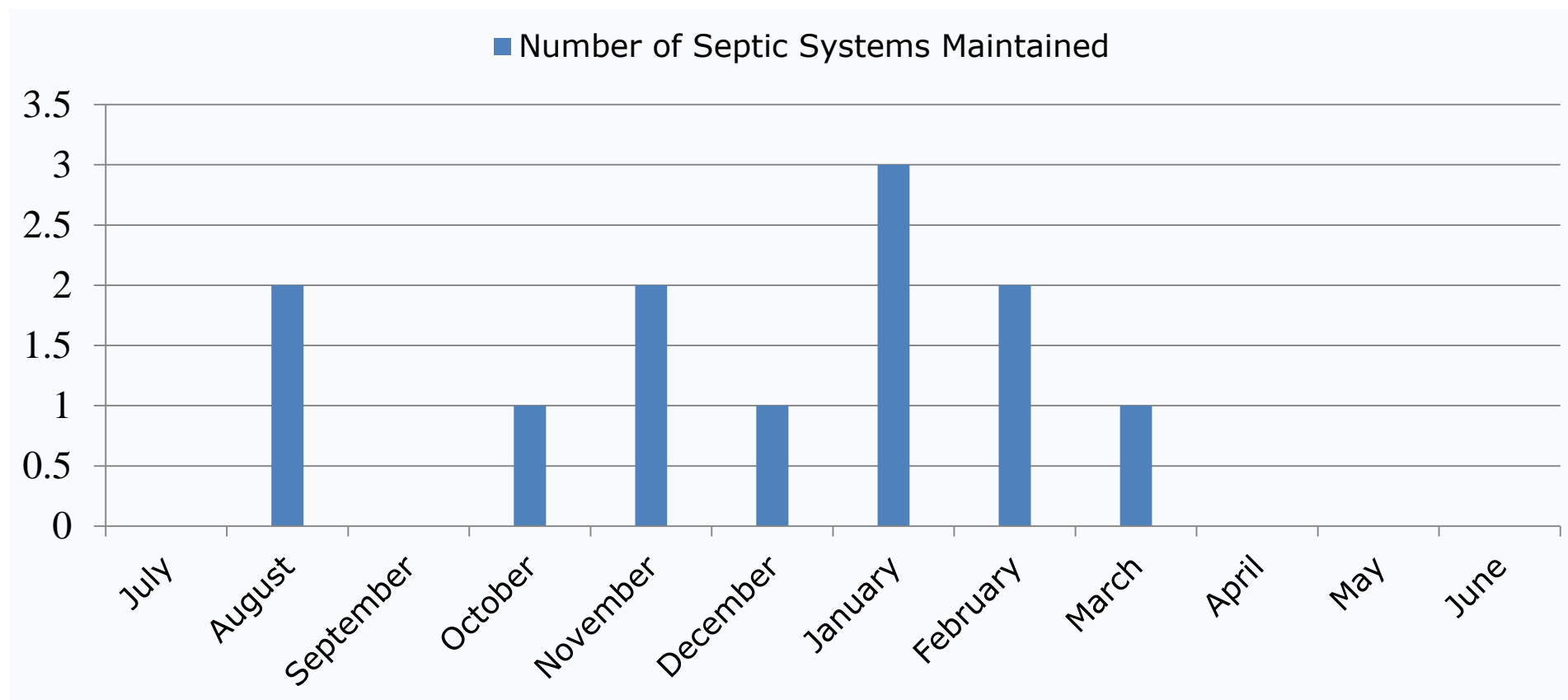
	Plan Reviews MS4 Reviews	Sureties	Certificate of Construction Compliance Inspections	Pre-Construction Meetings	Pre-Clearing Inspections	Post Construction BMP Inspections	Pre-Application Meetings	Total Plan Review Hours
FY 2018 YTD Totals	186	48	44	26	29	64	70	930 Hrs.
FY 2017 Totals	253	62	96	47	45	7	23	1,265 Hrs.

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



	Number of Drainage Concerns Investigated	Number of Meetings
FY 2018 YTD Totals	46	70
FY 2017 Totals	72	80

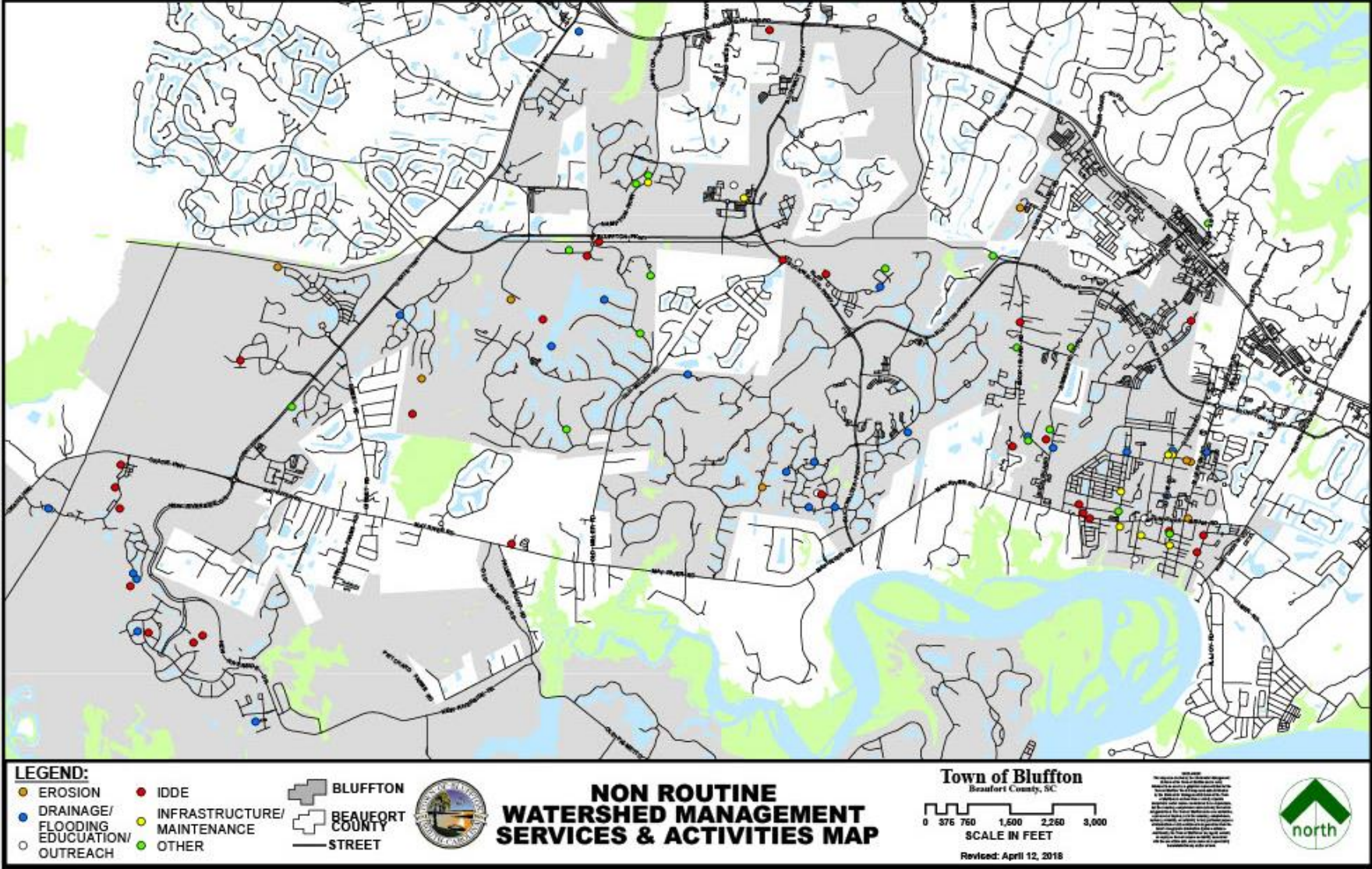
Septic System Maintenance Assistance



	Number of Septic Systems Maintained
FY 2018 YTD Totals	12
FY 2017 Totals	18

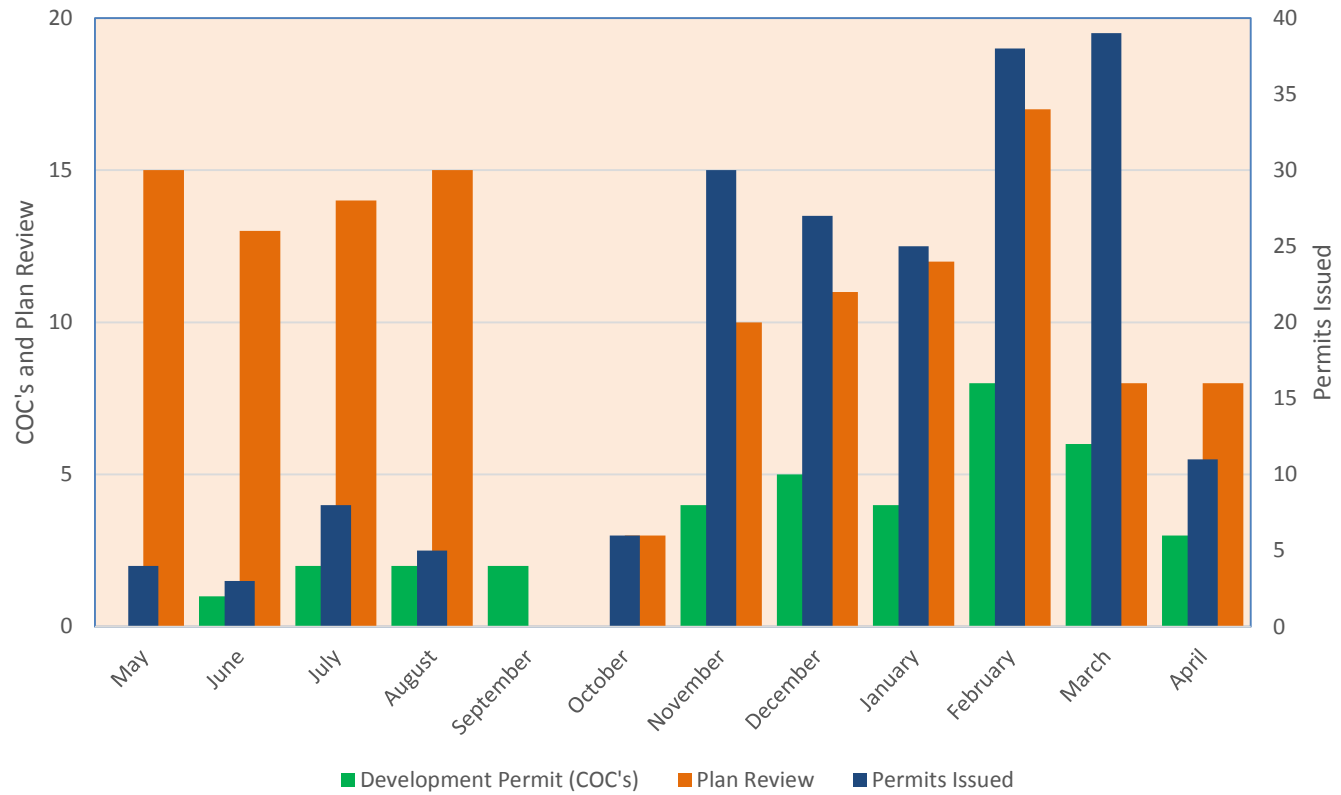
Requests for septic system maintenance are down due to completed connections along on Buck Island Road and Simmonsville Road as part of the Phase #3/4 BIS Sewer projects.

Citizen Request for Watershed Mngt. Services & Activities Map



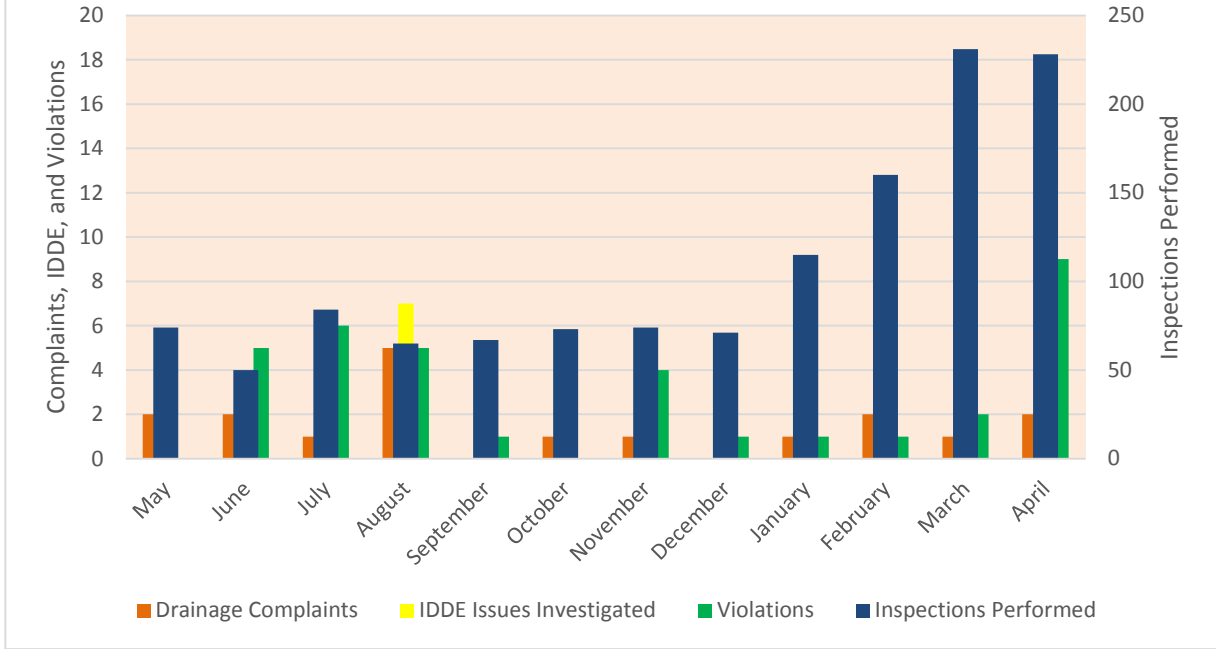
	Number of Citizen Requests Investigated	Number of Meetings
FY 2018 YTD Totals	59	64
FY 2017 Totals	53	82

MS4 Minimum Control Measure #5 Stormwater Plan Review



TYPE	May	June	July	August	September	October	November	December	January	February	March	April	Last 12 Months
Development Permit (COC's)	0	1	2	2	2	0	4	5	4	8	6	3	37
Plan Review	15	13	14	15	0	3	10	11	12	17	8	8	126
Permits Issued	4	3	8	5	0	6	30	27	25	38	39	11	196

MS4 Minimum Control Measure #4 Erosion Sediment Control Inspections



TYPE	May	June	July	August	September	October	November	December	January	February	March	April	Last 12 Months
Inspections Performed	74	50	84	65	67	73	74	71	115	160	231	228	1292
Drainage Complaints	2	2	1	5	0	1	1	0	1	2	1	2	18
IDDE Issues Investigated	0	3	3	7	1	1	3	2	0	1	0	0	21
Violations	0	5	6	5	1	0	4	1	1	1	2	9	35



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



M E M O R A N D U M

TO: Natural Resources Committee
Stormwater Utility Board

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

DATE: April 25, 2018

SUBJECT: Condemnation for Easement – 4 tracts associated with the Pine Grove Road, Kato Lane & Burlington Circle

Condemnation for Easement – Jenkins Road tract 15-103

Easement Abandonment – Multiple tracts @ Bessies Ln. & Young Cir.

The attached easement exhibits are being proposed by staff at the request of adjacent property owners and/or Councilman Dawson to either begin formal condemnation procedures to acquire the easement, abandonment of existing easements, and/or cease easement acquisition. Multiple written, verbal and personal communications have resulted in unsuccessful voluntary easement acquisitions. Councilman Dawson has been involved with the acquisition process and supports further action.

Pine Grove Road, Kato Lane & Burlington Circle

The Stormwater Department often receives requests to maintain this regionally significant system due to flooding issues. The process to obtain easements needed for this ditch system formally began in January 2017. The County has received 20 unrecorded notarized easements out of the 24 requested easements. Three property owners consisting of four tracts (42B, 284, 285 & 287 as noted on the attached exhibit) have verbally denied granting easements. These property owners were contacted at least twice by letter, door hangers were left and personal contact was established. Councilman Dawson was instrumental in acquiring a couple unrecorded notarized easements, however, he is recommending board/committee review for condemnation and he will support their decision.

Jenkins Road

The process to obtain easements for this ditch system formally began in March 2017. Easements for the southern section of the ditch were acquired and recorded. The County has received 2 unrecorded notarized easements out of three requested easements for the northern section of the ditch. Multiple attempts of communication and negotiation including a visit from Councilman Dawson were unsuccessful on the remaining tract. Tract 15-103 (as shown on the attached easement exhibit) is heir's property and the heir who pays the taxes does not want to grant an easement to the County. Staff proposes condemnation of tract 15-103 to complete the easement acquisition process for this ditch. Councilman Dawson is recommending board/committee review for condemnation and he will support their decision.

Bessies Lane and Young Circle

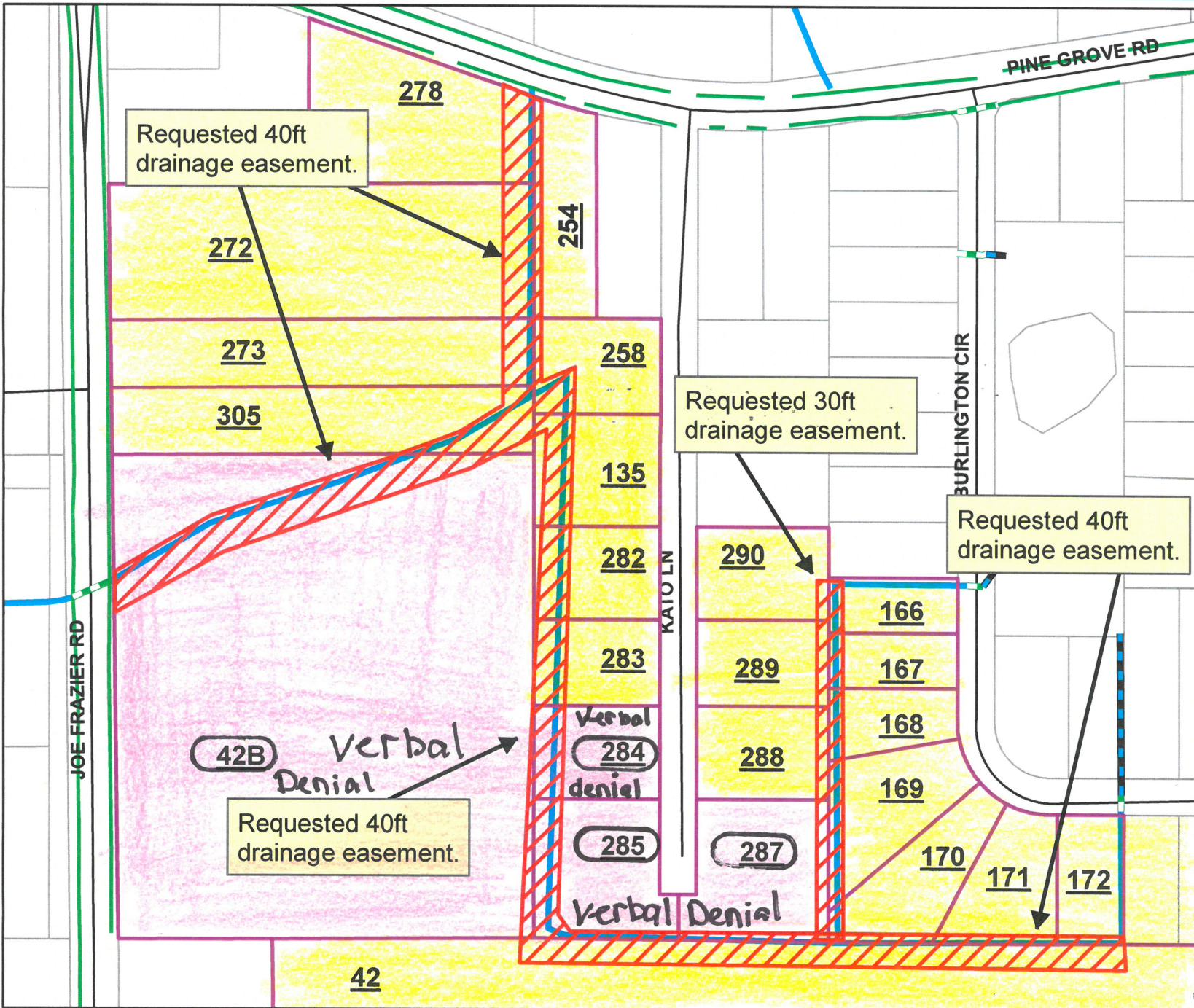
The process to obtain the easements needed for this regionally significant ditch system formally began in March 2017, although conversations with one of the residents offering to assist in garnering community

support began several years ago. Through past efforts, the County has recorded several easements. However, there are gaps in easement coverage to fully cover the system. While we have signed (unrecorded) easements on two tracts, we have numerous tracts still unsigned. All remaining property owners have been contacted by letter at least twice and have had multiple other attempts to communicate with them. Rev. Venice Young initially volunteered to assist us. We communicated with him 12 times, including 4 “no-show” meetings. Recently, one of the property owners, in which the County has a recorded easement, has stated verbally they desire to have the easement abandoned and do not want the County to continue to maintain the system. Due to lack of interest, Staff is recommending abandonment of all current recorded easements, ceasing further attempts to acquire easements, and ceasing future maintenance of this system. Abandonment would include easements on Tracts R100-16-199, R100-13-8A, & R100-13-17.

(Exhibit "A")
R100-24
Pine Grove Road

Activity: Drainage Easement

Township: Port Royal Island



Legend

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

42B Verbal Denial
Requested 40ft drainage easement.

Verbal denial
284
285
Verbal Denial

Requested 40ft drainage easement.

Requested 30ft drainage easement.

Requested 40ft drainage easement.

Notarized Easements

Verbal denial

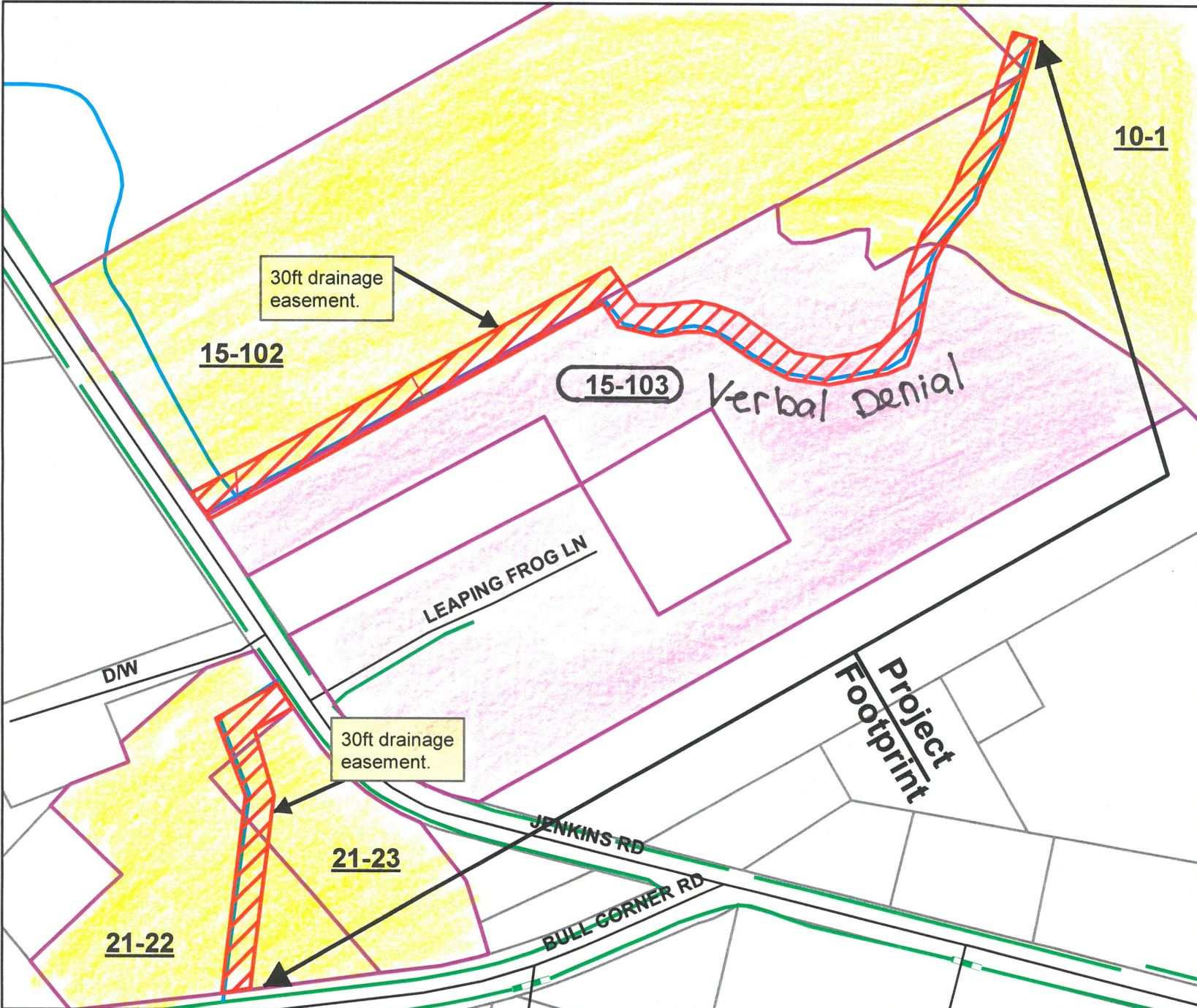


1 inch = 189 feet

(Exhibit "A")
**R700-
 Jenkins Road**

**Activity: Drainage
 Easement Request**

**Township:
 Sheldon**



Legend

- Requested Esmt
- Access Pipe
- Bleeder Pipe
- Channel Pipe
- Channel
- Crossline Pipe
- Lateral
- Lateral Pipe
- Road Pipe
- Roadside
- Roadside Pipe
- Parcels
- Easements

Notarized Easements

Verbal Denial

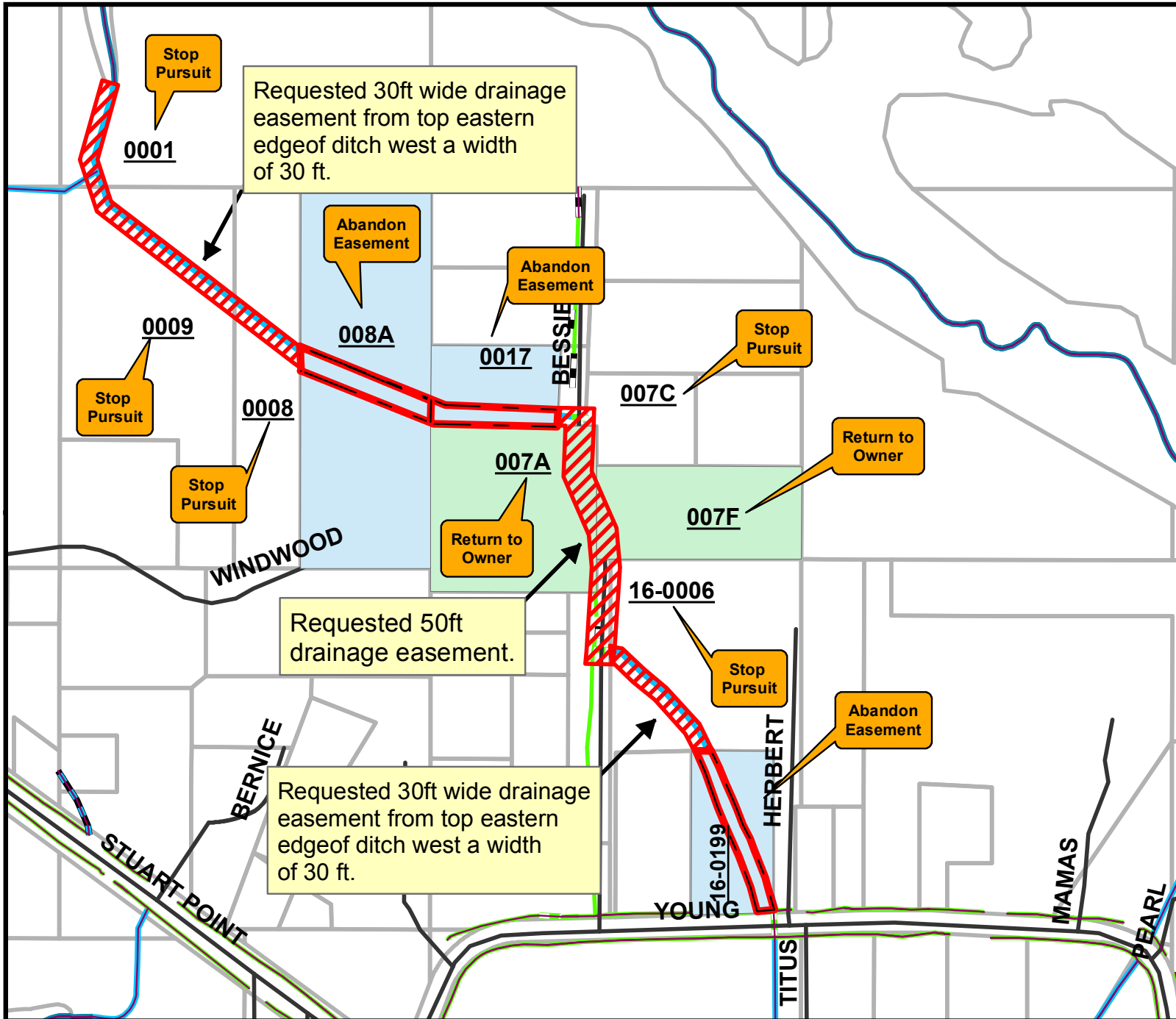


1 inch = 192 feet

(Exhibit "A")
 R100-13
 Young Circle &
 Bessies Lane

Activity: Drainage
 Easement Request

Township: Port
 Royal Island



Legend

- Requested Esmt
- Recorded Easements
- Notorized Easements
- Parcels
- Easements
- Ditch to be Constructed
- River
- Creek/Stream
- River/Creek/Marsh BANK
- Channel Pipe
- Roadside
- Roadside Pipe
- Road Pipe
- Crossline Pipe
- Driveway Pipe
- Lateral
- Lateral Pipe
- Access Pipe
- Bleeder Pipe
- Channel (fka Outfall)
- To be Piped



1 inch = 251 feet



MEMORANDUM

Date: May 9, 2018

To: Stormwater Management Utility Board

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

Re: **Maintenance Project Report**

This report will cover eight minor projects. The Project Summary Reports are attached.

Minor or Routine Projects:

- **Community Center Road – Sheldon (SWUD 5):** This project improved 4,855 feet of drainage system. The scope of work included cleaning out 4,855 feet of roadside ditch. The total cost was **\$12,183.17**.
- **Fiddler Drive – Lady’s Island (SWUD 7):** This project improved 1,628 feet of drainage system. The scope of work included cleaning out 1,628 feet of roadside ditch, jetting out 13 driveway pipes and hydroseeding for erosion control. The total cost was **\$11,610.59**.
- **Dolphin Point Drive – Lady’s Island (SWUD 7):** This project improved 250 feet of drainage system. The scope of work included cleaning out 250 feet of roadside ditch, removing fallen trees, jetting out 1 crossline pipe, 2 driveway pipes and hydroseeding for erosion control. The total cost was **\$4,756.72**.
- **St Helena Island Valley Drains – St. Helena Island (SWUD 8):** This project improved 4,597 feet of drainage system. The scope of work included cleaning 4,597 feet of valley drains. The total cost was **\$4,289.43**.
- **Mayberry Lane – Lady’s Island (SWUD 7):** This project improved 347 feet of drainage system. The scope of work included cleaning out 347 feet of roadside ditch, installing 1 driveway pipe and repairing a washout. The total cost was **\$3,988.27**.
- **Browns Island Road – Sheldon (SWUD 5):** The scope of work included installing 1 driveway pipe. The total cost was **\$3,367.50**.
- **Laurel Street W – Port Royal Island (SWUD 6):** This project improved 1,276 feet of drainage system. The scope of work included cleaning out 1,276 feet of roadside ditch. The total cost was **\$2,750.55**.
- **Penn Center – St Helena Island (SWUD 8):** This project improved 2,040 feet of drainage system. The scope of work included cleaning out 2,040 feet of channel. The total cost was **\$1,650.68**.



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Community Center Road

Activity: Routine/Preventive Maintenance

Duration: 08/09/17-08/28/17

Narrative Description of Project:

Project improved 4,855 L.F. of drainage system. Cleaned out 4,855 L.F. of roadside ditch.

2018-515 / Community Center Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
HAUL / Hauling	106.0	\$2,286.51	\$998.52	\$297.35	\$0.00	\$597.37	\$4,179.75
RSDCL / Roadside Ditch - Cleanout	200.0	\$4,540.30	\$967.81	\$164.68	\$0.00	\$2,281.80	\$7,954.59
UTLOC / Utility locates	1.0	\$24.70	\$0.00	\$0.00	\$0.00	\$13.23	\$37.93
2018-515 / Community Center Road Sub Total	307.5	\$6,862.41	\$1,966.33	\$462.03	\$0.00	\$2,892.40	\$12,183.17
Grand Total	307.5	\$6,862.41	\$1,966.33	\$462.03	\$0.00	\$2,892.40	\$12,183.17

Before



During



After



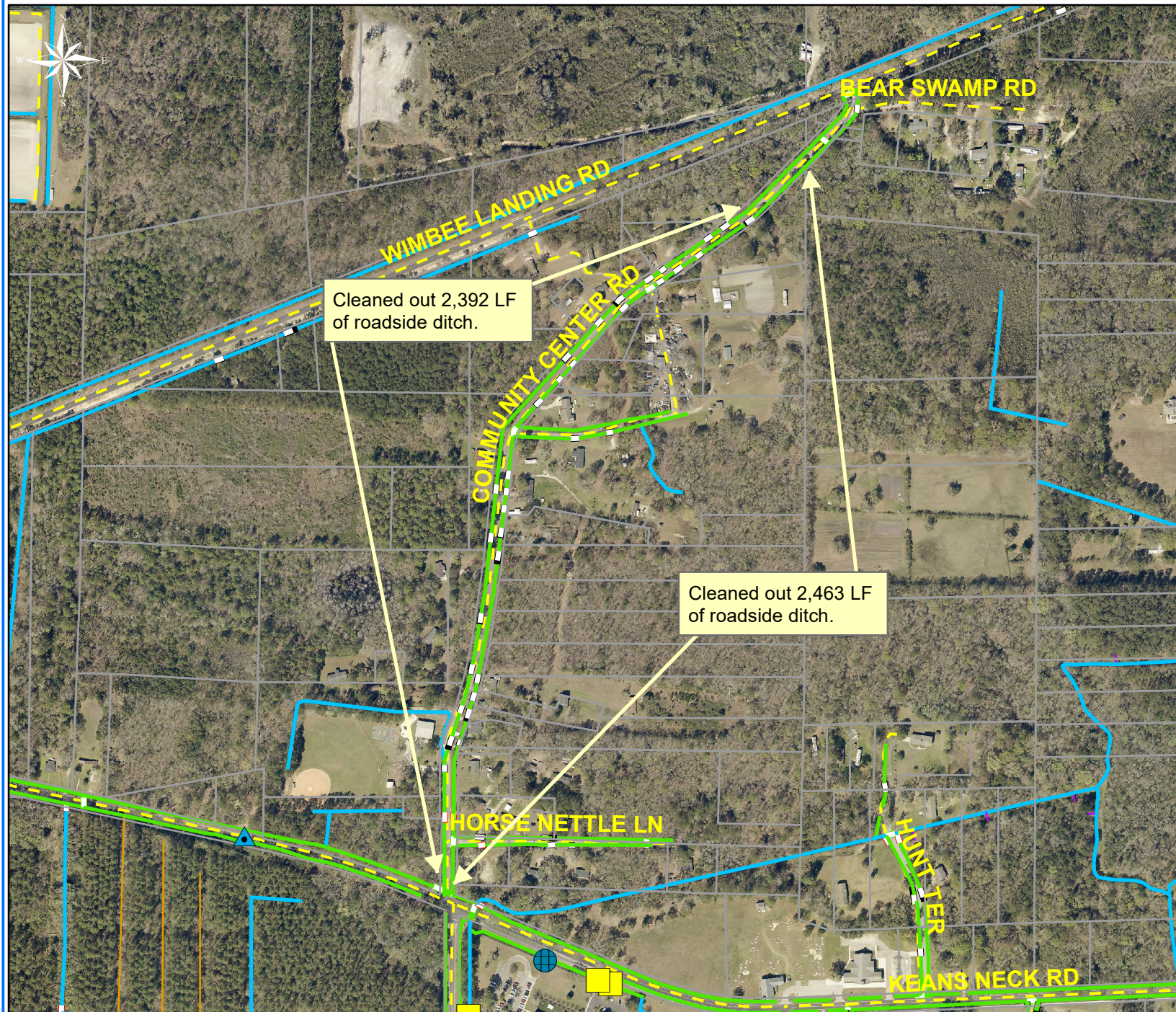
Project: Community Center Road

Activity: Routine/ Preventive Maintenance

Project #: 2018-515

Township/SW Dist: Sheldon/5

Completed: August 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

0 120 240 480 720 960 Feet

1 inch = 500 feet

Prepared By: BC Stormwater Management Utility

Date Print: 04/11/18

File: C:\project summaries map\Community Center Road_2018-515



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Fiddler Drive

Activity: Routine/Preventive Maintenance

Duration: 09/26/17-10/20/17

Narrative Description of Project:

Project improved 1,628 L.F. of drainage system. Cleaned out 1,628 L.F. of roadside ditch. Jetted (13) driveway pipes. Hydroseeded for erosion control.

2018-526 / Fiddler Drive	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
DPJT / Driveway Pipe - Jetted	30.0	\$668.40	\$130.20	\$95.50	\$0.00	\$430.20	\$1,324.30
HAUL / Hauling	74.5	\$1,617.21	\$692.16	\$347.23	\$0.00	\$266.77	\$2,923.37
HYDR / Hydroseeding	14.0	\$315.79	\$62.52	\$703.23	\$0.00	\$175.38	\$1,256.92
RSDCL / Roadside Ditch - Cleanout	150.0	\$3,109.40	\$838.49	\$170.71	\$0.00	\$1,774.80	\$5,893.40
UTLOC / Utility locates	5.0	\$123.50	\$12.06	\$0.00	\$0.00	\$66.15	\$201.71
2018-526 / Fiddler Drive Sub Total	274.0	\$5,845.20	\$1,735.43	\$1,316.67	\$0.00	\$2,713.30	\$11,610.59
Grand Total	274.0	\$5,845.20	\$1,735.43	\$1,316.67	\$0.00	\$2,713.30	\$11,610.59

(Pictures Not Available)



Project: Fiddler Drive
 Activity: Routine/ Preventive Maintenance
 Project #: 2018-526
 Township/SW Dist: Lady's Island/7
 Completed: October 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 = 350 feet

Prepared By: BC Stormwater Management Utility
 Date Print: 03/08/18
 File: C:\project summaries map\Fiddler Drive_2018-526



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Dolphin Point Drive

Activity: Routine/Preventive Maintenance

Duration: 10/10/17-10/20/17

Narrative Description of Project:

Project improved 250 L.F. of drainage system. Cleaned out 250 L.F. of roadside ditch. Removed fallen trees from flow line. Jetted (1) crossline pipe and (2) driveway pipes. Hydroseeded for erosion control.

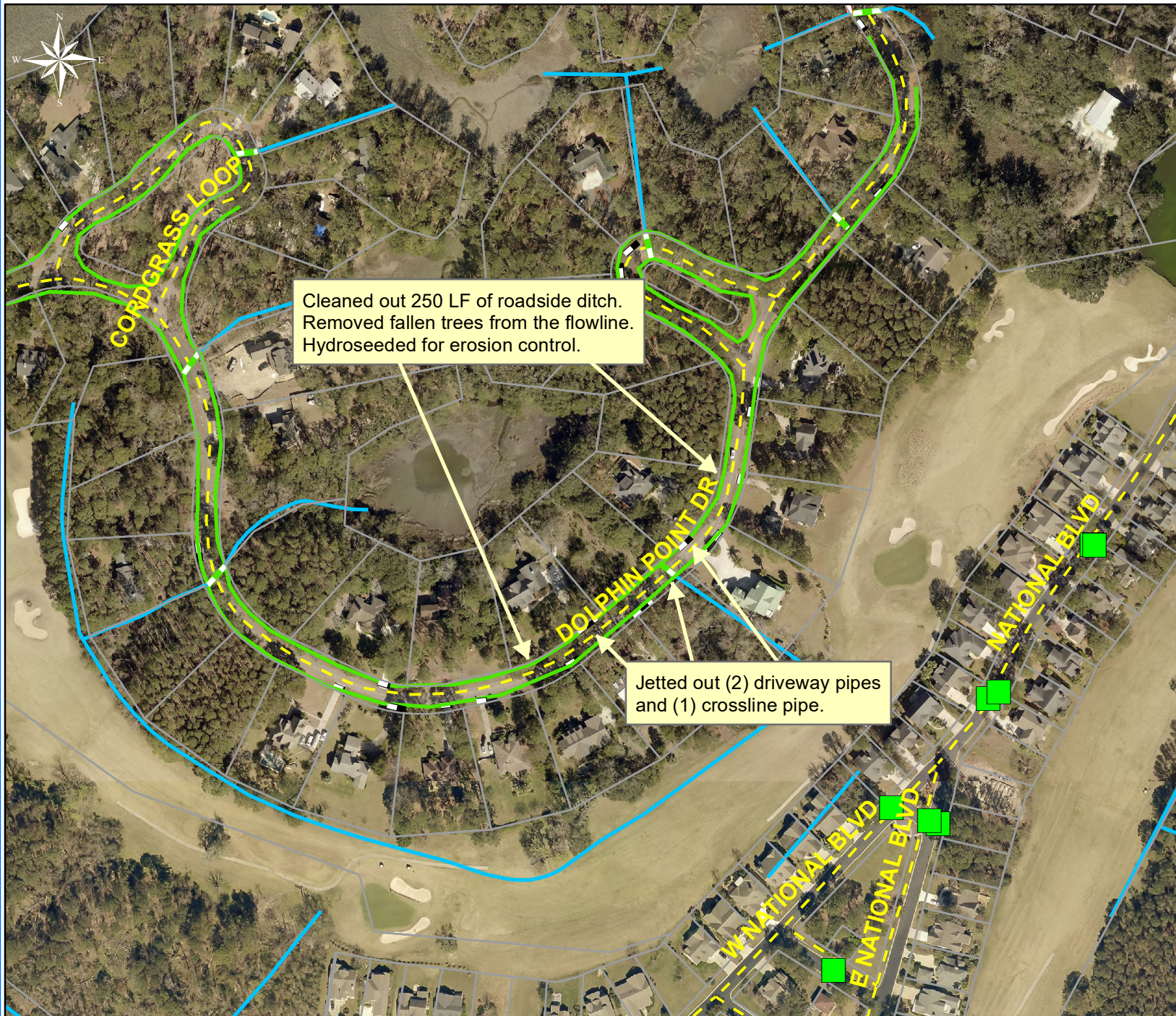
2018-530 / Dolphin Point Drive	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
CLPJT / Crossline Pipe - Jetted	12.0	\$267.36	\$52.08	\$35.80	\$0.00	\$172.08	\$527.32
HAUL / Hauling	17.0	\$376.19	\$160.14	\$127.93	\$0.00	\$173.04	\$837.30
HYDR / Hydroseeding	6.0	\$137.31	\$35.68	\$271.84	\$0.00	\$89.10	\$533.93
RSDCL / Roadside Ditch - Cleanout	65.0	\$1,495.75	\$244.98	\$67.85	\$0.00	\$814.80	\$2,623.38
TC / Traffic Control - Jobsite	6.0	\$130.10	\$7.68	\$7.76	\$0.00	\$59.40	\$204.94
UTLOC / Utility locates	0.5	\$12.35	\$0.00	\$0.00	\$0.00	\$6.62	\$18.97
2018-530 / Dolphin Point Drive Sub Total	107.0	\$2,429.96	\$500.56	\$511.18	\$0.00	\$1,315.03	\$4,756.72
Grand Total	107.0	\$2,429.96	\$500.56	\$511.18	\$0.00	\$1,315.03	\$4,756.72

Before

During

After





Cleaned out 250 LF of roadside ditch. Removed fallen trees from the flowline. Hydroseeded for erosion control.

Jetted out (2) driveway pipes and (1) crossline pipe.

Project: Dolphin Point Drive

Activity: Routine/ Preventive Maintenance

Project #: 2018-530

Township/SW Dist: Lady's Island/7

Completed: October 2017

Legend

Drainage Type

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

0 60 120 240 360 480 Feet

1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print:04/11/18

File:C:\project summaries map\Dolphin Point Drive_2018-515



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: St. Helena Island Valley Drains

Activity: Routine/Preventive Maintenance

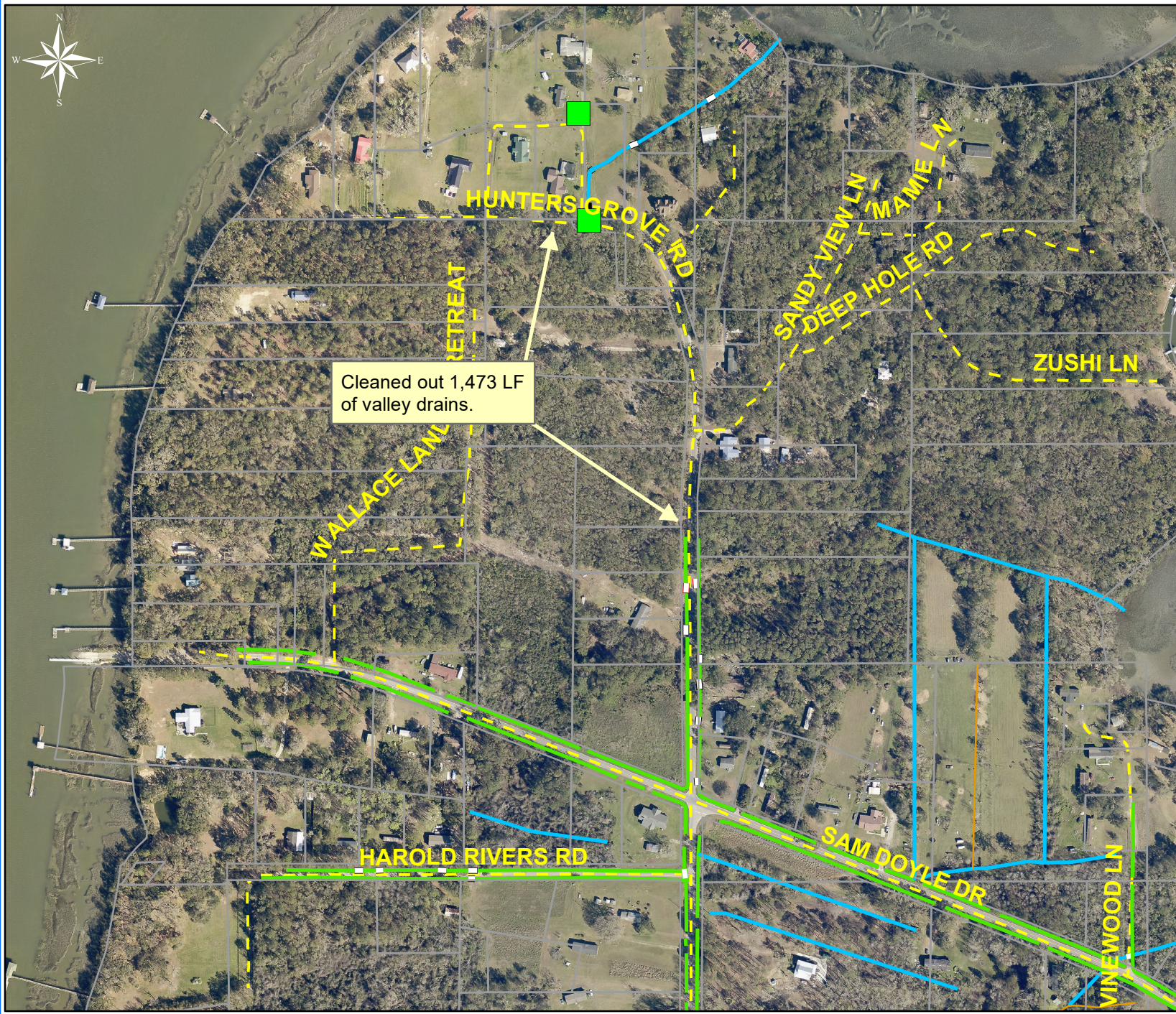
Duration: 08/17/17-10/10/17

Narrative Description of Project:

Project improved 4,597 L.F. of drainage system. Cleaned 4,597 L.F. of valley drains. This project consisted of the following areas: Hunters Grove Road (1,473 L.F.), White Sands Circle (1,174 L.F.), Luther Warren Drive (1,950 L.F.)

2018-312 / St Helena Island - Valley Drains	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
COVD / Cleaned Out Valley Drains	72.0	\$1,611.32	\$299.26	\$130.56	\$0.00	\$1,037.65	\$3,078.78
HAUL / Hauling	26.0	\$561.08	\$244.92	\$105.35	\$0.00	\$288.40	\$1,199.75
2018-312 / St Helena Island - Valley Drains Sub Total	98.5	\$2,183.30	\$544.18	\$235.91	\$0.00	\$1,326.05	\$4,289.43
Grand Total	98.5	\$2,183.30	\$544.18	\$235.91	\$0.00	\$1,326.05	\$4,289.43

(Pictures Not Available)



Project: St. Helena
Island Valley
Drains- Hunters
Grove Road
Map #1

Activity: Routine/
Preventive
Maintenance

Project #:
2018-312

Township/SW Dist:
St. Helena Island/8

Completed:
October 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

Prepared By: BC Stormwater Management Utility

Date Print: 04/18/18

File: C:\project summaries map\St. Helena Island Valley Drains -Hunters Grove Road Map#1_2018-312



Project: St. Helena
Island Valley
Drains- White
Sands Circle
Map #2

Activity: Routine/
Preventive
Maintenance

Project #:
2018-312

Township/SW Dist:
St. Helena Island/8

Completed:
October 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 30 60 120 180 240
Feet

1 inch = 130 feet

Prepared By: BC Stormwater Management Utility

Date Print:04/18/18

File:C:\project summaries map/St. Helena Island Valley Drains - White Sands Circle Map#2_2018-312



Project: St. Helena Island Valley Drains- Luther Warren Drive Map #3

Activity: Routine/ Preventive Maintenance

Project #: 2018-312

Township/SW Dist: St. Helena Island/8

Completed: October 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: 04/18/18

File: C:\project summaries map\St. Helena Island Valley Drains - Luther Warren Drive Map#3_2018-312



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Mayberry Lane

Activity: Routine/Preventive Maintenance

Duration: 11/27/17-11/30/17

Narrative Description of Project:

Project improved 347 L.F. of drainage system. Cleaned out 347 L.F. of roadside ditch. Installed (1) driveway pipe. Repaired washout.

2018-545 / Mayberry Lane	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
DPINS / Driveway Pipe - Installed	40.0	\$866.90	\$157.89	\$502.00	\$0.00	\$429.30	\$1,956.09
HAUL / Hauling	20.0	\$430.45	\$188.40	\$123.83	\$0.00	\$216.30	\$958.98
RPWO / Repaired Washout	6.0	\$131.26	\$7.20	\$17.84	\$0.00	\$83.82	\$240.12
RSDCL / Roadside Ditch - Cleanout	21.0	\$459.41	\$96.83	\$39.08	\$0.00	\$207.90	\$803.22
UTLOC / Utility locates	0.5	\$12.35	\$0.00	\$0.00	\$0.00	\$6.62	\$18.97
2018-545 / Mayberry Lane Sub Total	88.0	\$1,911.27	\$450.32	\$682.75	\$0.00	\$943.94	\$3,988.27
Grand Total	88.0	\$1,911.27	\$450.32	\$682.75	\$0.00	\$943.94	\$3,988.27

Before

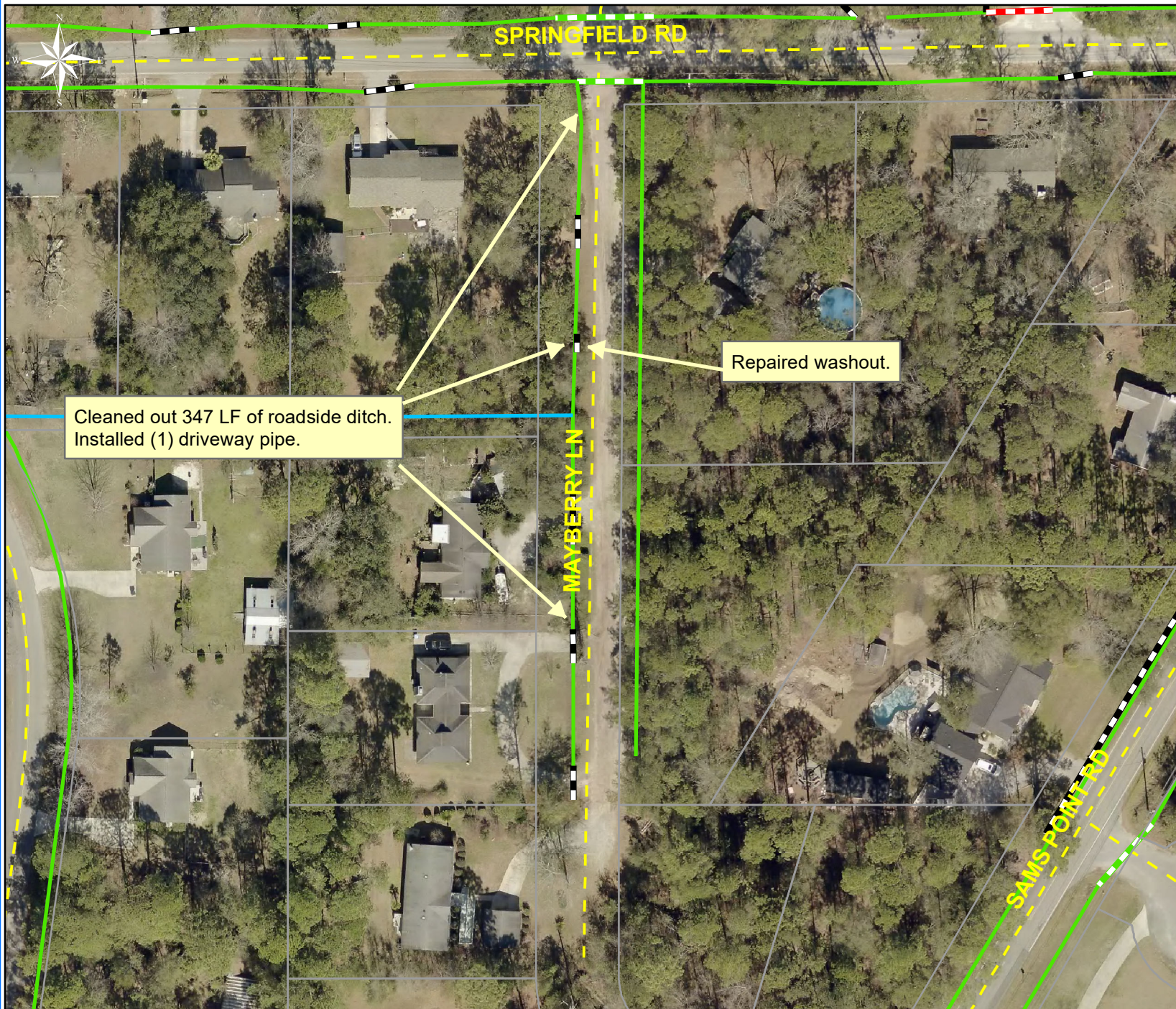


During



After





Project: Mayberry Lane

Activity: Routine/ Preventive Maintenance

Project #: 2018-545

Township/SW Dist: Lady's Island/7

Completed: November 2017

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



1 inch = 83 feet

Prepared By: BC Stormwater Management Utility
 Date Print: 03/08/18
 File: C:\project summaries map\Mayberry Lane_2018-545



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Browns Island Road

Activity: Routine/Preventive Maintenance

Duration: 10/10/17-10/12/17

Narrative Description of Project:

Installed (1) driveway pipe.

2018-531 / Browns Island Road

	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
APREP / Asphalt Preparation	15.0	\$325.25	\$44.78	\$28.63	\$0.00	\$148.50	\$547.16
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
DPINS / Driveway Pipe - Installed	20.0	\$457.70	\$131.51	\$314.05	\$0.00	\$297.00	\$1,200.26
HAUL / Hauling	25.0	\$526.85	\$235.50	\$592.60	\$0.00	\$216.30	\$1,571.25
UTLOC / Utility locates	1.0	\$24.70	\$0.00	\$0.00	\$0.00	\$13.23	\$37.93
2018-531 / Browns Island Road Sub Total	61.5	\$1,345.40	\$411.79	\$935.28	\$0.00	\$675.03	\$3,367.50
Grand Total	61.5	\$1,345.40	\$411.79	\$935.28	\$0.00	\$675.03	\$3,367.50

Before



During



After





Project: Browns Island Road

Activity: Routine/ Preventive Maintenance














Project #: 2018-531

Township/SW Dist: Sheldon/5

Completed: October 2017

Legend

Drainage Type

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



1 inch = 170 feet



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Laurel Street W

Activity: Routine/Preventive Maintenance

Duration: 10/18/17-10/24/17

Narrative Description of Project:

Project improved 1,276 L.F. of drainage system. Cleaned out 1,276 L.F. of roadside ditch.

2018-537 / Laurel Street W	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
HAUL / Hauling	23.0	\$512.21	\$216.66	\$60.20	\$0.00	\$331.66	\$1,120.73
RSDCL / Roadside Ditch - Cleanout	35.0	\$797.95	\$227.39	\$38.06	\$0.00	\$517.60	\$1,580.99
UTLOC / Utility locates	1.0	\$24.70	\$0.00	\$0.00	\$0.00	\$13.23	\$37.93
2018-537 / Laurel Street W Sub Total	59.5	\$1,345.76	\$444.05	\$98.26	\$0.00	\$862.49	\$2,750.55
Grand Total	59.5	\$1,345.76	\$444.05	\$98.26	\$0.00	\$862.49	\$2,750.55

Before



During



After





Project: Laurel Street W

Activity: Routine/ Preventive Maintenance

Project #: 2018-537

Township/SW Dist: Port Royal Island/6

Completed: October 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 = 130 feet

Prepared By: BC Stormwater Management Utility
 Date Print: 04/11/18
 File: C:\project summaries map\Laurel Street W_2018-537



Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Penn Center Channel #1

Activity: Routine/Preventive Maintenance

Duration: 11/27/17

Narrative Description of Project:

Project improved 2,040 L.F. of drainage system. Cleaned out 2,040 L.F. of channel.

2018-544 / Penn Center Channel #1	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$10.90	\$0.00	\$0.00	\$0.00	\$0.00	\$10.90
CCO / Channel - cleaned out	40.0	\$891.00	\$182.49	\$35.39	\$0.00	\$530.90	\$1,639.78
2018-544 / Penn Center Channel #1 Sub Total	40.5	\$901.90	\$182.49	\$35.39	\$0.00	\$530.90	\$1,650.68
Grand Total	40.5	\$901.90	\$182.49	\$35.39	\$0.00	\$530.90	\$1,650.68

Before



During



After





Project: Penn Center Channel #1

Activity: Routine/ Preventive Maintenance

Project #: 2018-544

Township/SW Dist: St. Helena Island/8

Completed: November 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

Prepared By: BC Stormwater Management Utility
 Date Print: 03/08/18
 File: C:\project summaries map\Penn Center Channe #1_2018-544



BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA
Wednesday, June 13, 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 – May 9, 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
6. NEW BUSINESS
 - A. Special Presentation – Super Fund Sites
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
 - A. July 11, 2018 ([backup](#))
9. ADJOURNMENT