BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA
Wednesday, March 10th, 2021
2:00 p.m.
County Council Chambers, 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 – February 10th, 2021 (backup)

2. INTRODUCTIONS

3. PUBLIC COMMENT

4. REPORTS
   A. Utility Update – Katie Herrera (backup)
   B. Monitoring Update – Katie Herrera (backup)
   C. Stormwater Implementation Committee Report – Katie Herrera (backup)
   D. Stormwater Related Projects – Katie Herrera (backup)
   E. Upcoming Professional Contracts Report – Katie Herrera (backup)
   F. Regional Coordination – Katie Herrera (backup)
   G. Municipal Reports – Katie Herrera (backup)
   H. MS4 Update – Katie Herrera (backup)
   I. Maintenance Projects Report – Matthew Rausch (backup)
   J. Liaison Report - Ms. Alice Howard

5. UNFINISHED BUSINESS

6. NEW BUSINESS

   A. FY22 Budget – Katie Herrera (backup)

7. PUBLIC COMMENT

8. NEXT MEETING AGENDA

   A. June 9th, 2021 - (backup)

9. ADJOURNMENT

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

February 10, 2021 at 2:00 p.m. via WebEx.

Board Members

Present	Absent
Allyn Schneider	
James Clark	
James Fargher	
Marc Feinberg	
Patrick Mitchell	
Steven Andrews	
Brian Watkins	

Ex-Officio Members

Present	Absent
Kim Jones	Nate Farrow
	Van Willis

Beaufort County Staff
Tiffany Patrick
Katie Herrera
Carolyn Wallace
Matthew Rausch

Visitors
Ellen Sturup Comeau, Clemson Extension
Jeff Netzinger, Town of Hilton Head
Alice Howard, County Council

1. Meeting called to order – Marc Feinberg at 2:00 pm

- **A.** Agenda – Approved
- **B.** Moment of Silent Reflection in Memory of Scott Liggett
- **C.** Approval of Minutes – Approved

2. Introductions – Completed.

3. Public Comment(s) – None.

4. Reports
Reports attached in agenda
Highlights:

A. Utility Update – Katie Herrera

- ✓ Southern Lowcountry Regional Board (SoLoCo)
  - o All milestones have been completed and the manual and ordinance was adopted by County Council on January 11, 2021. Implementation began February 1, 2021. A training session was held for the development community and one is being held for in house staff.

- ✓ If anyone has any suggestions for special presentations please let Katie or Tiffany know.

- ✓ The county is anticipating the DHEC shellfish program annual report in April or May timeframe.

- ✓ County staff is working with Gentry Locke to do research on delinquent fees for municipalities.

- ✓ Reminder: Annual Financial report from the Municipalities are due – Per the Intergovernmental Agreements for the Utility, each year on September 30th, the City and Towns are required to submit a summary of revenue and expenditures for the previous fiscal year.
    - Beaufort County – Unaudited numbers are ready.
    - ***Town of Hilton Head Island – Received.***
    - ***Town of Bluffton – Received.***
    - Town of Port Royal – Not received.
    - City of Beaufort – Not received

B. Monitoring Update – Katie Herrera
Highlights:

- ✓ Vacuum Truck crew (Troy, Dominic, Charles & David) recognized for their work in the community.

C. Stormwater Implementation Committee (SWIC) Report – Katie Herrera
Highlights:

- ✓ The second meeting was held January 29, 2021 with a discussion on cost sharing efforts between Clemson & USCB as well as the required MOA updates needed.

D. Stormwater Related Projects – Katie Herrera
Highlights:

- ✓ The county is requesting updates to be sent monthly and are working with staff on obtaining easements for these projects. Two are coming to closure.

- ✓ Flyover bridge preventative maintenance and deferred maintenance repairs –
  Last Update - As of 02/09/2021, the last required permit was delivered and all necessary permits for construction had been received. Beaufort County staff are working with the consultant to add in a second scope to provide additional services which includes bid package information, cost estimate, and some construction oversite.

- ✓ Shell Point Community – The existing conditions report was received and will go forward for comment by Mid-February. It will include some identified proposed improvement areas and result exhibits of the improvements. There is coordination with the GIS department to discuss existing naming conventions in order to keep in alignment with County format.

- ✓ Factory Creek Watershed Regional Detention Basin "Phase I" & Academy Park

Subdivision – Construction is complete. The consultant is working on obtaining a close-out schedule from the developer, including final surveys. Contractual obligations have been met once final surveys are received.

- ✓ Factory Creek Watershed Regional Detention Basin "Phase II – Construction has been completed, with closeout inspection and as-built to be obtained in coordination with the developer. Beaufort County staff is coordinating with Legal and the property owner for the easements.

- ✓ It is also noted that the Academy Park Pond will be purchased by the county for $1.

E. Professional Contracts Report – Katie Herrera
Highlights:

- ✓ Salt Creek and Shanklin Road – 90% of the design for both projects is complete. The county is still waiting for property owner interest for both. Salt Creek - Permit applications have been submitted. NPDES and OCRM coverage was received. The county is still awaiting SCDOT and County permits to be issued.

- ✓ Evergreen Regional Pond 319 grant project – All bids for work have been obtained. A bidder has been recommended for contract award based on being the lowest price and the most responsible. It is scheduled to present at Public Facilities Committee on February 16th with plans for it to be on the County Council agenda soon after to move forward.

- ✓ Stormwater engineering consulting services – Woolpert has been sent the third scope of work for them to propose. Second scope is about to be complete.

F. Regional Coordination – Katie Herrera
Highlights:

- ✓ Mossy Oaks Task Force – The county is working with the City of Beaufort staff. Once Mossy Oaks is in compliance, the county will do monitoring for the city in coordination with USCB.

G. Municipal Reports – Katie Herrera
Highlights:
Reports information.

- ✓ Town of Hilton Head Island (From Jeff Netzinger, Stormwater Manager)
  - o Reports Received
- ✓ Town of Bluffton (From Kim Jones, Watershed Management Division Director)
  - o Reports Received
  - o Kim wished to make the board aware of a statewide holistic effort coming from the SC Floodwaters Commission. There will be a planting effort for Earth Day. They are looking for volunteers to plant 3 million loblolly pines.
- ✓ City of Beaufort (From Nate Farrow, Public Works Director)
  - o No information was available at the time of this report.

- ✓ Town of Port Royal (From Van Willis, Town Manager and Tony Maglione, consultant)

- No information was available at the time of this report.

H. MS4 Update – Katie Herrera
Highlights:

- ✓ Permits and inspections have not subsided. 61 permits were issued last month for residential and commercial properties.

- ✓ Three stormwater inspectors, a plan reviewer and the Stormwater Manager were appointed as stormwater code enforcement officers.

- ✓ In the SoLoCo manual, the escalating enforcement plan was amended to get to resolutions on projects with violations quicker.

- ✓ Rainfall Report – Stormwater did monitoring with USCB

- ✓ Education Report - Ellen Sturup Comeau, Clemson Extension
  - Aquatic Plant Management will be covered in the March 4, 2021 Healthy Pond Series.
  - There will be a consortium meeting held February 16, 2021 with Lowcountry Stormwater partners to discuss upcoming Earth Day activities.
- ✓ Update – Katie Herrera
  - A statewide general permit for construction has been approved and will be going live for implementation on March 1, 2021.

I. Maintenance Projects Report – Matthew Rausch
Highlights:

- ✓ Four major projects:
  - Spanish Wells Road – Pink Sands Lane – Bluffton (SWUD 4): $37,310.83
  - Burlington Circle – Port Royal Island (SWUD 6): $26,407.18
  - View Point Circle – St. Helena Island (SWUD 8): $21,782.55
  - Ephraim Road Channel #1 – St. Helena Island (SWUD 8): $19,747.93
- ✓ Three minor or routine projects:
  - Bluffton Vacuum Truck - Bluffton (SWUD 4): $27,014.85
  - Mourning Dove Lane – Bluffton (SWUD 4): $6,329.33
  - Reeds Road – Lady's Island (SWUD 4): $4,640.32

J. Liaison Report – Beaufort County Council - Alice Howard
Highlights:

- ✓ At the retreat held last week, there was a discussion regarding septic systems that are failing and how to get more grants for Infrastructure improvements for low and moderate income areas.

- ✓ The finance committee discussed staff posting. No vote was done during the retreat but

how to improve turnover rate and salary increase were discussed in relation to next year's budget.

5. New Business –

- ✓ Katie Herrera has moved into the Stormwater Manager position. Tiffany Patrick has been hired as the Stormwater Administrative Assistant.

- ✓ Mr. Marc Feinberg asked for board input on resuming meeting in person at the County Council Chambers for the March 10, 2021 SWUB. The vote was unanimous to move forward in person.

- ✓ Mr. Marc Feinberg welcomed Brian Watkins to the SWUB as member at large.

- ✓ After 12 years of service to the Beaufort County Stormwater Utility Board, Mr. James Fargher submitted his resignation. Mr. Fargher provided a resignation speech.

- ✓ Update – Katie Herrera provided an update on MOA agreements that need to be signed again to enter into contract with USCB & Clemson Extension. There cannot be contracts without MOA agreements. At this time there does not need to be a vote.

- ✓ Katie Herrera presented the Scott Liggett Service Award to Mr. James Fargher.

- ✓ Katie Herrera stated that the Scott Liggett Service Award would also be presented to Mr. William Bruggemann.

6. Public Comment(s) – *None*

7. Next Meeting Agenda –

- ✓ Agenda approved by vote.

8. Meeting Adjourned

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March 10th, 2021

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Utility Update

1. Southern Lowcountry Regional Board (SoLoCo)
   a) The current schedule for completion and finalization on the document and activities of Center for Watershed Protection (CWP) is as follows:

      All project milestones have been completed.

2. Regionalization
   a) Regional Stormwater Design Standard and Model Ordinance Project – See update above.
   b) Regionalization of programs – With the finalization of the Regional Stormwater Design Standard and Model Ordinance it is hoped each participating jurisdiction will adopt these policy documents for implementation to provide consistent administration of Stormwater Management guidelines and policies in the region. Discussions of a Regional Stormwater Authority to administer the adopted guidelines and policies holistically within the region/jurisdictions can be fostered.
   c) Implementation of new standards began on February 1st, 2021. At this time Staff have been working with several contractors on new requirements, but no submittals at this time.
3. Special presentation suggestions –
   - Suggestions for Future Meetings
     - Street-scape presentation – Town of Bluffton – TBD
     - Wetlands as carbon sinks - TBD
     - DHEC Shellfish Presentation – TBD
     - Battery Creek Bacteria Presentation – Katie Herrera - June 2021
     - Battery Creek Bacteria Presentation – DHEC - September 2021

4. Military installation and other State and Federal properties SWU fees – See "Delinquent Accounts" below. Staff continues to work with GIS to update impervious area layers for the military installations.

5. Delinquent accounts – Phase I Investigations with Gentry Locke Attorneys (looking at data, laws, ordinances, synopsis of case law) to provide recommendations and likely outcomes of either negotiations or litigation.
   - Gentry Locke continues to do research on delinquent fees.

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6. Reminder: Annual Financial report from the Municipalities are due – Per the Intergovernmental Agreements for the Utility, each year on September 30th, the City and Towns are required to submit a summary of revenue and expenditures for the previous fiscal year.
   a) Beaufort County – Received.
   b) Town of Hilton Head Island – Received.
   c) Town of Bluffton – Received.
   d) Town of Port Royal – Not received.
   e) City of Beaufort – Not received.

Monitoring Update

1. Lab Update (From Dr. Alan Warren and Lab Manager Danielle Mickel)
   i. See attached.

Stormwater Implementation Committee (SWIC) Report

1. SWIC members were sent the Annual Report Memo as well as Management Fee Memo on Wednesday, February 17th.

Stormwater Related Projects

1. Easements – Staff is working on easement requests and meets monthly to review status. A few condemnations are still being pursued using outside legal counsel.

2. Complaints – Staff continually works numerous drainage related complaints each month.
   a) Flyover bridge preventative maintenance and deferred maintenance repairs – Recent update: Project is going to Beaufort County for final permits, all other permits have been obtained. Consultant is working on cost estimate guide for work. Work will be performed by a Contractor.
   b) Shell Point Community - Naming conventions for GIS assets being finalized with internal staff for GIS to make appropriate changes. Met with field data collector early this morning to clarify a few things along Baynard Road. Found an additional outfall that appears to discharge DOT runoff directly to the marsh.

3. 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) – Pond excavation is complete and the project is near ready to be closed out. AEC is scheduled to asbuilt the pond by the end of March. County staff is working with Legal and Property Owner for land acquisition.

4. Factory Creek Watershed Regional Detention Basin "Phase II" (Design Cost =

$63,390, Tree Mitigation Cost is pending, Construction Cost by the Developer) – Construction has been completed, with closeout inspection and as-built to be obtained in coordination with Developer.

5. Graves Property / Pepper Hall Public / private partnership – Staff continues to work with Davis and Floyd, other departments, and property owner.

6. Whitehall property purchase –No updates at this time.

7. Lady's Island Plan, Sea Level Rise, and "no-fill" ordinance – No updates at this time.

Professional Contracts Report

1. CIP FY 18 Grouping Stormwater Projects – (Design - Ward Edwards $202,000, Andrews Engineering $560,490, Const. est. $5,512,900)
    a) Salt Creek and Shanklin Road – 90% design for both projects. Still waiting for property owner interest.
    b) Salt Creek - Beaufort County MS4 and OCRM received. SCDOT under review. Once permits are obtained, the project will be submitted to SRT and then placed out for bid. AEC reached out to property owners to gauge interest in moving forward with property acquisition, no response was received.
    c) Shanklin – USACE submittal underway. MS4, OCRM, and SCDOT submittals will be made as wetland impacts are finalized. AEC reached out to property owners to gauge interest in moving forward with property acquisition, no response was received.
    d) Brewer Memorial – The project has received Conditional Final SRT approval with conditions mentioned in the previous project report. Since last month's update, we have received BCOLT approval for the project and have compiled a package to resubmit to County staff with the intent to resolve the conditions. We are awaiting a new signed Stormwater Maintenance Agreement and Design Checklist. Once these items are provided, the package will be delivered. Bid documents have been completed and provide to the County so that they can initiate the bid procurement process.

2. Evergreen Regional Pond 319 grant project – (Design=$89,286, Construction=$590,000. Grant=$229,124) – Final Contract award approved by Public Facilities on February 16th, and County Council on February 22nd. Contract between County and CBG, Inc reviewed and approved by SW staff on February 26th. Sent to Legal for final review and approval. Construction begin date to be determined by Beaufort County.

3. Stormwater engineering consulting services – Woolpert conducted an in house SoLoCo Plan reviewer training on February 11th. This information was also sent to all of the municipalities as it also contained updates on the DHEC CGP.

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Woolpert also reviewed the Public Notice for a TMDL to be written for Capers Creek. See Attached.

Regional Coordination

1. Town of Bluffton and Beaufort County Joint meetings on Sanitary Sewer in the May River watershed – No update at this time.

2. Mossy Oaks Task Force – County working with USCB and City of Beaufort staff to begin sampling efforts in two areas where drainage improvements are being made.

3. Charleston Area MS4 managers group – No update at this time.

4. May River Watershed Modeling – See municipal reports for more information.

5. Port Royal Sound Conservation Working Group – No additional update at this time.

Municipal Reports

1. Town of Hilton Head Island (From Jeff Netzinger, Stormwater Manager and Brian Eber, MS4 Coordinator)
   i. See attached.

2. Town of Bluffton (From Kim Jones, Watershed Management Division Director)
   i. No information available at time of this report.
3. City of Beaufort (From Nate Farrow, Public Works Director)
   i. No information was available at the time of this report.

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

MS4 Report

1. Plan Review – See the attached chart for Beaufort County Stormwater staff plan review workload for the past 12 months.

2. Stormwater Permits – See the attached chart for Beaufort County Stormwater permits issued for the past 12 months.

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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. Weather Station Data. See attached report.

5. Public Education – See attached report.

6. Energov permitting software – Staff to continue to test and provide feedback to Energov Implementation team.

7. MS4 Statewide General permit – No further update at this time.

8. Statewide General permit for Construction - Permit affective date March 1, 2021.

9. SCDOT – No further update at this time.

USCB Water Quality Lab Update

Beaufort County

BC Monitoring Plan 2021:

- **Description**: Monitoring plan for 2021 continue from last year to include sampling sites covering all 5 categorical types:
  Category 1: TMDL monitoring
  Category 2: IDDE screening and monitoring
  Category 3: Water quality monitoring (baseline, based upon 303d list)
  Category 4: MOA points
  Category 5: Special project monitoring

- **Status:** First quarter sampling has begun. Waiting on wet event qualifier to finish quarter.

Pepper Hall Drainage Study:

- **Description:** Pepper Hall property monitoring plan consists of a bi-monthly collection of six sampling sites; 3 inlets and 3 outlets to determine baseline data prior to construction. Sampling will continue during and after construction to measure the effectiveness of BMP's required on-site.

- **Status:** Bi-monthly sampling has begun in January 2021.

Crystal Lake:

- **Description:** Crystal Lake bi-monthly sampling and analysis began in August at three locations; boardwalk, nature trail and drainage into lake.

- **Status:** Project ended at the end of September 2020.

Okatie West Pond: Bold and Gold

- **Description:** Environmental Conservation Solutions, LLC, in conjunction with Beaufort County, installed an innovative bacteria and nutrient removing side-bank filter to a section of a newly constructed wet detention pond for the Okatie West Regional Stormwater Project. The purpose of the joint effort is to evaluate the efficiency of the Bold & Gold Side-Bank filter for the possible application in the county to achieve target stormwater treatment in existing and new stormwater BMPs. The pilot project is a 60-foot side bank filter with a 2-foot layer of Bold & Gold® CTS Filtration media as the treatment mechanism, overlaid by a 6-inch well-draining soil that is connected to an underdrain pipe. The filter is located on the south side of the wet detention pond.

- **Status:** Another sampling and analytical effort for Environmental Conservation Solutions, LLC to measure the ability of the Bold and Gold filtration media to remove bacteria from stormwater detained in the pond known as Okatie West is requested and we are waiting on level of pond to increase. The previous sampling and analytical efforts occurred in March 2020. Efforts were made in November, but bacterial counts were too low to gauge efficiency of filter.

Port Royal Cypress Wetland

- **Description:** The Town of Port Royal wanted to continue with WQ monitoring at the Cypress as the Town is working on a plan to renovate the wetlands to eliminate invasives as much as possible, re-dredge the open water areas and eliminate as many Tallow trees as possible. Having a current base line of WQ information before any work is performed is critical to assessing the "before and after" conditions in Cypress.

- **Status:** Cypress wetland project latest sampling effort was on September 13th and 18th 2019 for a dry and wet event respectively. Power Point report was included in the February 2020 lab update.

Port Royal Redevelopment:

- **Description:** The Town of Port Royal continues with WQ monitoring for the four sites in the proposed redevelopment area. The sampling schedule is quarterly wet events and is included in Beaufort County's Monitoring Plan.

- **Status:** First quarter has begun.

Town of Bluffton

- **Description:** Monitoring for 2021 continues and includes monitoring for the categories; water quality, 319, MS4, MST, TMDL, and shared locations. A request from Town of Bluffton was made for data analysis of sampling sites dating from 2009 to present.

- **Status**: Monitoring for 2021 continues. USCB is putting together a plan and awaiting data from the Town for the requested data analysis.

USCB Laboratory

Additional Projects:

- Palmetto Bluff: Continued sampling efforts of 12x/year for 6 wet/6 dry events. Sampling sites have been revised.

- GEL Engineering: Continue accepting samples for Hilton Head collected by GEL Engineering 4x/ quarter.

Lab Projects:

- On February 21, 2020, an investigation of an oyster aquaculture operation on St. Helena Island was performed at the request of the owner. The aquaculture pond's water is largely supplied by Wallace Creek, which is frequently closed to shellfish harvesting.

- Dr. Warren supplied USCB's mathematicians/computational science faculty with SCDHEC water quality data at every shellfish station in Areas 14-20. This is similar to what Dr. Warren did a few years ago, and what Dr. Montie did more recently with examining long-term trends and exceedances of fecal coliform based on harvesting standards.

- New equipment arrived to include Rhodamine sensor for various studies, including pond retention times.
- 2021 Proficiency testing for the Water Pollution and Water Supply study has begun.

Total Maximum Daily Load Document for Shellfish Monitoring Station 15-20 in Capers (a.k.a Cowen, Wallace) Creek Within HUC 030502080503 Fecal coliform Bacteria

Prepared for
SCDHEC Bureau of Water

by
Banu Varlik
February 2021

Abstract

§303(d) of the Clean Water Act and EPA's *Water Quality Planning and Management* Regulations (40 CFR Part 130 2006 ed.) requires states to develop total maximum daily loads (TMDLs) for water bodies that are included on the §303(d) list of impaired waters. A TMDL is the maximum amount of pollutant a waterbody can assimilate while meeting water quality standards (WQS) for the pollutant of concern. All TMDLs include a waste load allocation (WLA) for any National Pollutant Discharge Elimination System (NPDES)-permitted dischargers, a load allocation (LA) for all nonpoint sources, and an explicit and/or implicit margin of safety (MOS). This technical report describes the development of fecal coliform TMDL for impaired shellfish monitoring station 15-20 in Capers (a.k.a Cowen, Wallace) Creek watershed located in Beaufort County, South Carolina. Station 15-20 has been included in the draft 2018 303(d) list for exceeding fecal coliform WQS for shellfish harvesting use and has been prioritized for restoration.

Currently, there are two NPDES permitted MS4 entities in this watershed: Beaufort County and South Carolina Department of Transportation (SCDOT). Both of these MS4s have been allocated a wasteload allocation (WLA).

For SCDOT, existing and future NPDES MS4 permittees, compliance with terms and conditions of their NPDES permit is an effective implementation of the WLA to the Maximum Extent Practicable (MEP) and demonstrates consistency with the assumptions and requirements of the TMDL. For existing and future NPDES construction and industrial stormwater permittees, compliance with terms and conditions of their permit is an effective implementation of the WLA. Required load reductions in the LA portion of this TMDL can be implemented through voluntary measures and are eligible for the *Clean Water Act* (CWA) §319 grants.

The South Carolina Department of Health and Environmental Control (SCDHEC) recognizes that adaptive management/implementation of these TMDLs might be needed to achieve the water quality standard and we are committed to targeting the load reductions to improve water quality in Capers Creek. As additional data and/or information become available, it may become necessary to revise and/or modify these TMDL targets accordingly.

Table Ab1. TMDLs for Capers Creek watershed. Loads are expressed as the most probable number (mpn) per 100 ml and allocations are expressed as % reductions.

Station	90th %tile of Existing Load (mpn/ 100ml)	TMDL [1, 2] (mpn/ 100ml)	WQ Target (mpn/ 100ml)	Margin of Safety (mpn/100ml)	WLA			LA
					Continuous Sources[3] (mpn/100ml)	Non-Continuous [4, 6] Sources (% Reduction)	Non-Continuous SCDOT [5, 6] (% Reduction)	% Reduction to Meet LA [6]
15-20	59.12	43	40.85	2.15	See Note Below	30.9	30.9	30.9

Table Notes:

1. TMDL is expressed as a concentration. If daily average tidal exchange estimates were available, this number could be converted to load in mpn/day by multiplying flow by concentration and a conversion factor.
2. TMDL Target = SFH water WQS for single sample maximum not to exceed 43 mpn/100 ml.
3. WLA is expressed as a daily maximum of 43 mpn/100 ml. There are no continuous dischargers at this time. Future continuous discharges are required to meet the prescribed loading for the pollutant of concern. Loadings are developed based upon the permitted flow and an allowable permitted maximum concentration of 43 mpn/100ml.
4. Percent reduction applies to all NPDES-permitted stormwater discharges, including current and future MS4s, construction, and industrial discharges covered under permits numbered SCS & SCR. Stormwater discharges are expressed as a percentage reduction due to the uncertain nature of stormwater discharge volumes and recurrence intervals. Stormwater discharges are required to meet percentage reduction or the existing instream standard for the pollutant of concern in accordance with their NPDES Permit.
5. By implementing the best management practices that are prescribed in either the SCDOT annual SWMP or the SCDOT MS4 Permit to address fecal coliform, the SCDOT will comply with these TMDLs and its applicable WLA to the maximum extent practicable (MEP) as required by its MS4 permit.
6. Percent reduction applies to the existing concentration.

Contents

Figures

Tables

1.0 Introduction

1.1 Background

The federal *Clean Water Act (CWA)* directs each state to review the quality of its waters every two years to determine whether water quality standards (WQS) are being met. If it is determined that the WQS is not being met, the states are to list the impaired water body under §303(d) of the CWA. These impairments are then addressed by a Total Maximum Daily Load (40 CFR 130.31(a)).

A Total Maximum Daily Load (TMDL) is a written plan and analysis to determine the maximum pollutant load a waterbody can receive and still meet applicable water quality standards. The TMDL process includes estimating pollutant contributions from all sources, linking pollutant sources to their impacts on water quality, allocation of pollutant contributions to each source, and establishment of control mechanisms to achieve water quality standards. All TMDLs include a wasteload allocation (WLA) for all National Pollutant Discharge Elimination System (NPDES) permitted discharges, a load allocation (LA) for all unregulated nonpoint sources, and an explicit and/or implicit margin of safety (MOS).

In South Carolina, oysters and clams are the two species of bivalve molluscan shellfish that are harvested commercially, recreationally, and utilized for aquaculture. These two species are Eastern or American oyster, *Crassostrea virginica*, and hard clam or Northern quahog, *Mercenaria mercenaria*. Both species are native to the North American Atlantic and Gulf coasts and have economic importance. Hard clams can and are harvested as wild but as a fishery, its importance comes from being used in mariculture.

Oysters in South Carolina cluster together to form oyster beds and oyster reefs. These formations stabilize shorelines from erosion, provide nursery grounds as well as protection for other marine species. In South Carolina, 95% of oyster reefs are intertidal, meaning they are exposed during low tide and submerged during high tide.

Both oysters and clams are filter feeders, meaning they filter water for algae as a nutrient source. In brackish and saltwaters, there are naturally occurring bacteria and viruses. Also, there are other sources for bacteria and viruses to enter these waters as a result of human activities, some examples are agricultural runoff, malfunctioning septic systems, pet waste, sanitary sewer overflows, and stormwater runoff.

An adult oyster can filter approximately 50 gallons of water a day, while an adult clam can filter approximately 24 gallons a day. These filter feeders can concentrate naturally occurring bacteria, such as pathogenic bacteria *Vibrio vulnificus* (*V.v.)* and *Vibrio parahaemolyticus* (*V.p.*), and viruses that are in the water as well as those resulting from human-related activities.

The National Shellfish Sanitation Program (NSSP) is the federal and state cooperative program recognized by both the United States Food and Drug Administration (FDA) and the Interstate Shellfish Sanitation Conference (ISSC). States have agreed, through participation in NSSP and membership in the ISSC, to enforce the Model Ordinance. The Model Ordinance supplies states with standards as well as administrative practices required for the sanitary control of shellfish produced and sold for human consumption.

Fecal coliform group of bacteria is usually not pathogenic and they are used as indicator organisms. As an indicator, they may indicate the presence of other pathogenic bacteria. In the NSSP Model Ordinance, water quality standard for shellfish harvesting waters is "… samples shall not exceed 14/100 ml and not more than 10% of the samples shall exceed an MPN of 43 MPN/100 ml for a five-tube decimal dilution test" which is the standard adopted by the State of South Carolina (SC DHEC 2014).

This TMDL document details the development of fecal coliform bacteria TMDL for one shellfish monitoring station, 15-20, located in Capers Creek (a.k.a. Cowen, Wallace), within shellfish management area (SFMA) 15 in Beaufort County, South Carolina (Figure 1). South Carolina Department of Health and Environmental Control (SCDHEC) currently has 4 active shellfish monitoring stations within Capers Creek watershed. For station location descriptions, please refer to Table 1 and Figure 1.

Shellfish monitoring station 15-20 has been included on the final 2018 303(d) list of impaired waters approved by the United States Environmental Protection Agency (the EPA) and subsequently prioritized for protection. During the 2018 - 2019 harvesting season, the area from station 15-18 to headwaters, including 15-20, was managed as "conditionally approved", based on a specific precipitation amount. During the 2019 – 2020 shellfish harvesting season, the area upstream of station 15-18 was closed for shellfish harvesting more than half of the time due to precipitation related exceedances of WQS. Due to the frequency of closures and beginning in October for the 2020-2021 harvesting season (which ends in May 2021), this area has been classified as "restricted" and closed for shellfish harvesting.

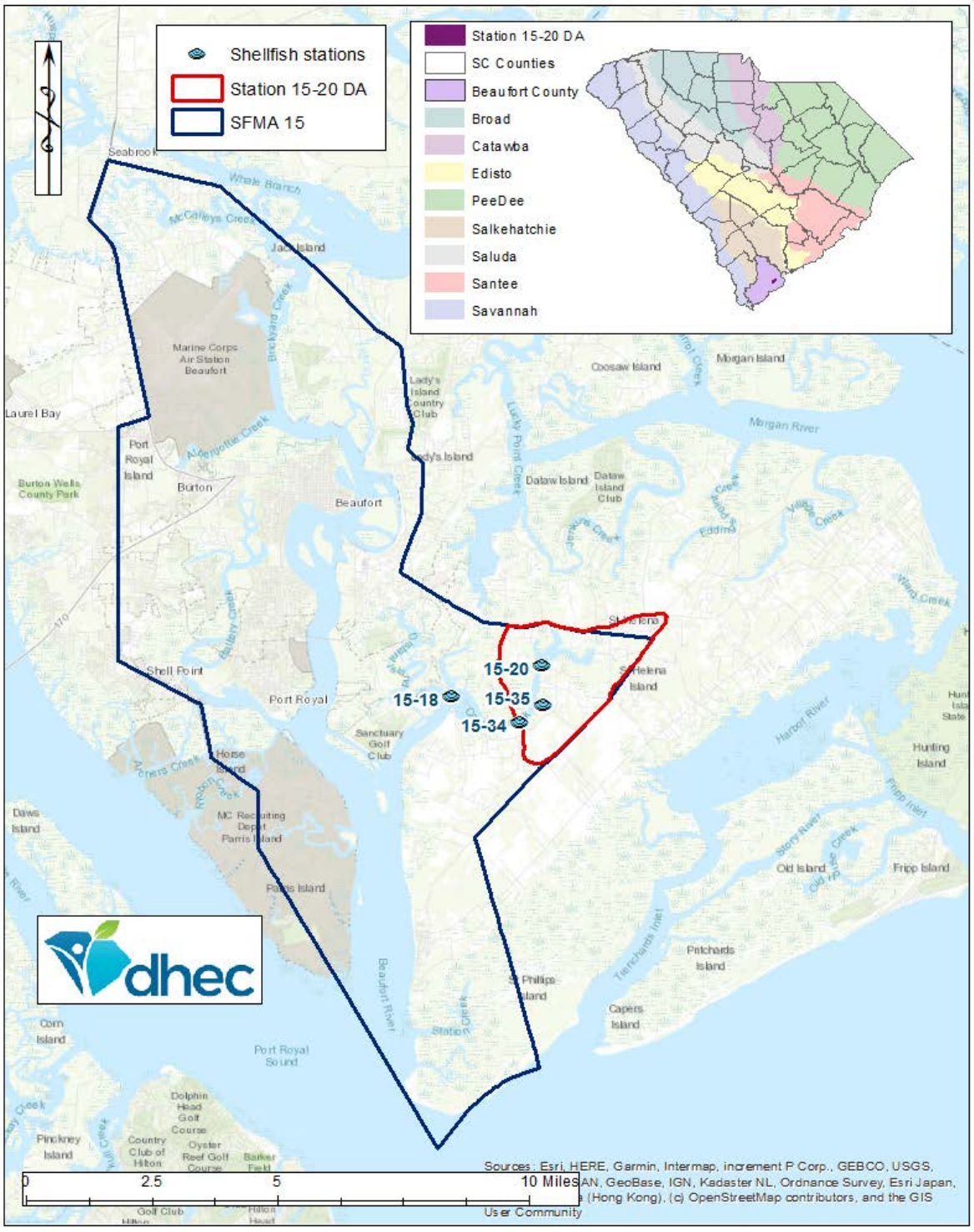


Figure 1. Shellfish management area 15, Capers Creek watershed and stations, Beaufort County, SC.

1.2 Watershed Description

Capers Creek is located on St. Helena Island with headwaters near Frogmore in Beaufort County, South Carolina. The Creek is encompassed within Shellfish Management Area (SFMA) 15 and 12-digit hydrologic unit code (HUC) 030502080503. Station 15-20 in Capers Creek has an approximate drainage area of 5.48 mi2 (Figure 1).

Capers Creek is located within the Sea Islands/Coastal Marsh ecoregion of South Carolina in Beaufort County. Generally, Sea Islands/Coastal Marsh ecoregions have the lowest elevations in South Carolina. The environment is highly dynamic and is affected by wind, ocean waves, and river flows. In these types of ecoregions slash pine, cabbage palmetto, red cedar, and live oaks forests are common. In the marshes saltgrass, rushes, and various cordgrasses are the dominant flora. Marshes are nursery grounds for shrimp, fish, crabs, and other species (Griffith, et al. 2002).

South Carolina Department of Health and Environmental Control (SCDHEC) currently has four active shellfish monitoring stations within this area. For station location descriptions, please refer to Table 1.

Until October 2017, there were two active stations in Capers Creek: 15-18 and 15-20. In 2017, a new station, 15-34, was added to better assess the water quality in this portion of the growing area. This station is located approximately halfway between 15-18 and 15-20. Fourth station, 15-35, was added on June 1, 2020, and sampling of this station has started recently. Station 15-35 is located at the inflow pipe of a shellfish growing pond on the Orange Grow Plantation property, was created to better assess the water quality of saltwater impoundment being used for growing oysters. This facility is permitted by the South Carolina Department of Natural Resources (DNR) (Permit number M-118). Of the four currently active stations and based on recent data, station 15-20 is not meeting the fecal coliform WQS for shellfish harvesting. Stations 15-18 and 15-34 are meeting the WQS; however, there is insufficient data to evaluate whether station 15-35 is meeting the WQS.

Table 1. Capers Creek shellfish monitoring stations and their location descriptions.

Station	Description
15-18	Second middle marsh in Chowan Creek
15-20	Capers Creek SSG at Penn Community Services Retreat Center
15-34	Wallace Creek, ~1.5 miles upstream from station 15-18
15-35	Located at the inflow pipe of the Shellfish Growing pond on the Orange Grove Plantation Property

1.1 Landuse

Landuses of station 15-20 in Capers Creek were calculated using the National Land Cover Database (NLCD) 2016 . Landuse characteristics are summarized in Table 2. Based on data analysis using NLCD 2016, primary landuse within is woody and emergent wetlands followed by forests, and developed landuses (Figure 2).

Table 2. Shellfish management area 15 landuse based on NLCD 2016.

Landuse	Area (acres)	Percent of Area (%)
Open Water	280.66	7.99
Developed	304.23	8.66
Forest	969.64	27.6
Scrub/Shrub and Grassland/Herbaceous	205.71	5.86
Barren Land	4.67	0.13
Cultivated Crops and Pasture/Hay	339.6	9.67
Woody and Emergent Herbaceous Wetlands	1408.2	40.09
Total	3512.71	100%

1.2 Water Quality Standard

Capers Creek is classified as shellfish harvesting waters (SFH). SFH waters are defined in SC Regulation 61-68 (SC DHEC 2014) as:
"Shellfish harvesting waters (SFH) are tidal saltwaters protected for shellfish harvesting and uses listed in Class SA and Class SB. Suitable for primary and secondary contact recreation, crabbing, and fishing. Also suitable for the survival and propagation of a balanced indigenous aquatic community of marine fauna and flora."

Fecal coliform WQS for SFH waters is (SC DHEC 2014):
"Not to exceed an MPN fecal coliform geometric mean of 14/100 ml; nor shall the samples exceed an MPN of 43/100 ml".

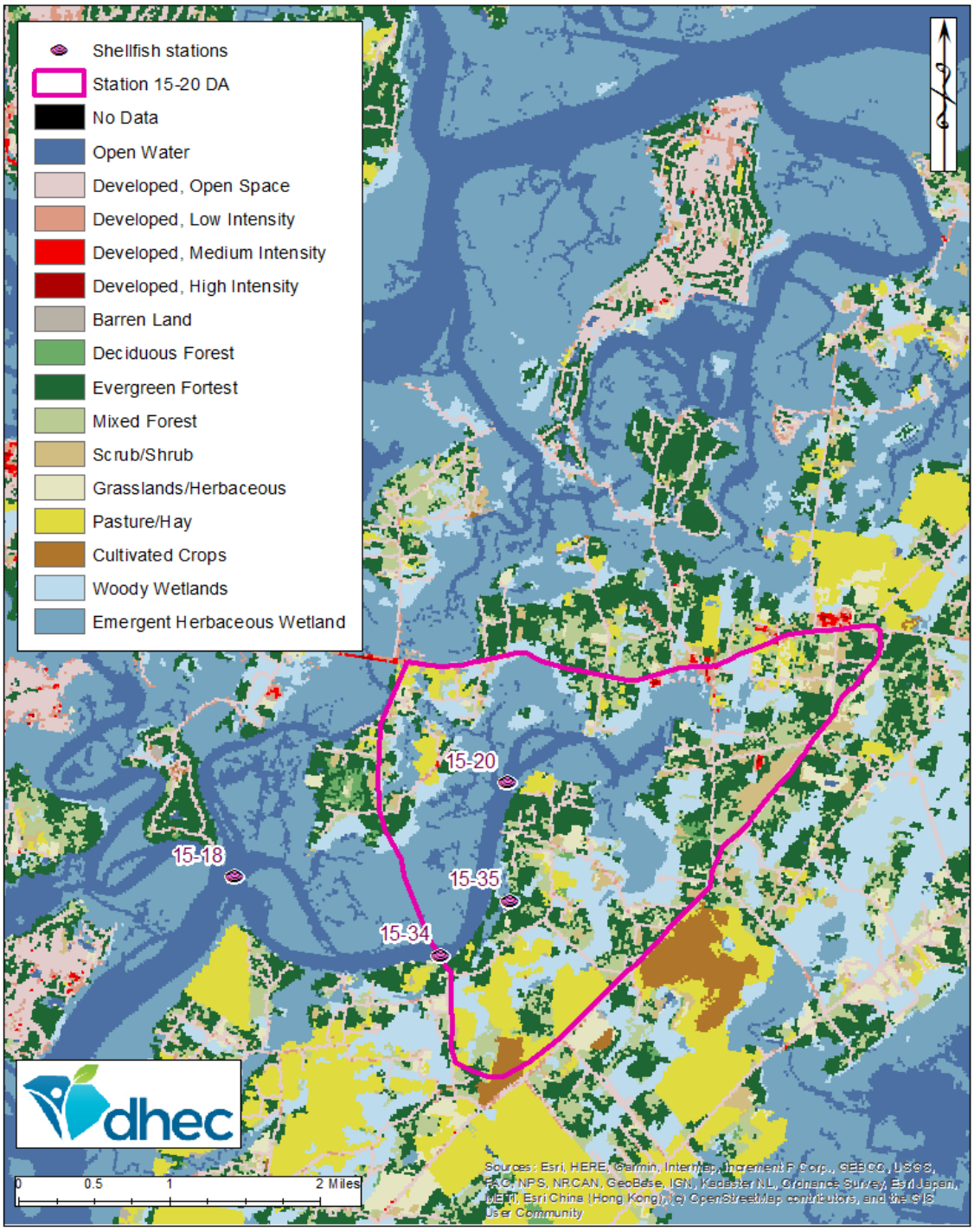


Figure 2. Station 15-20 landuses based on NLCD 2016.

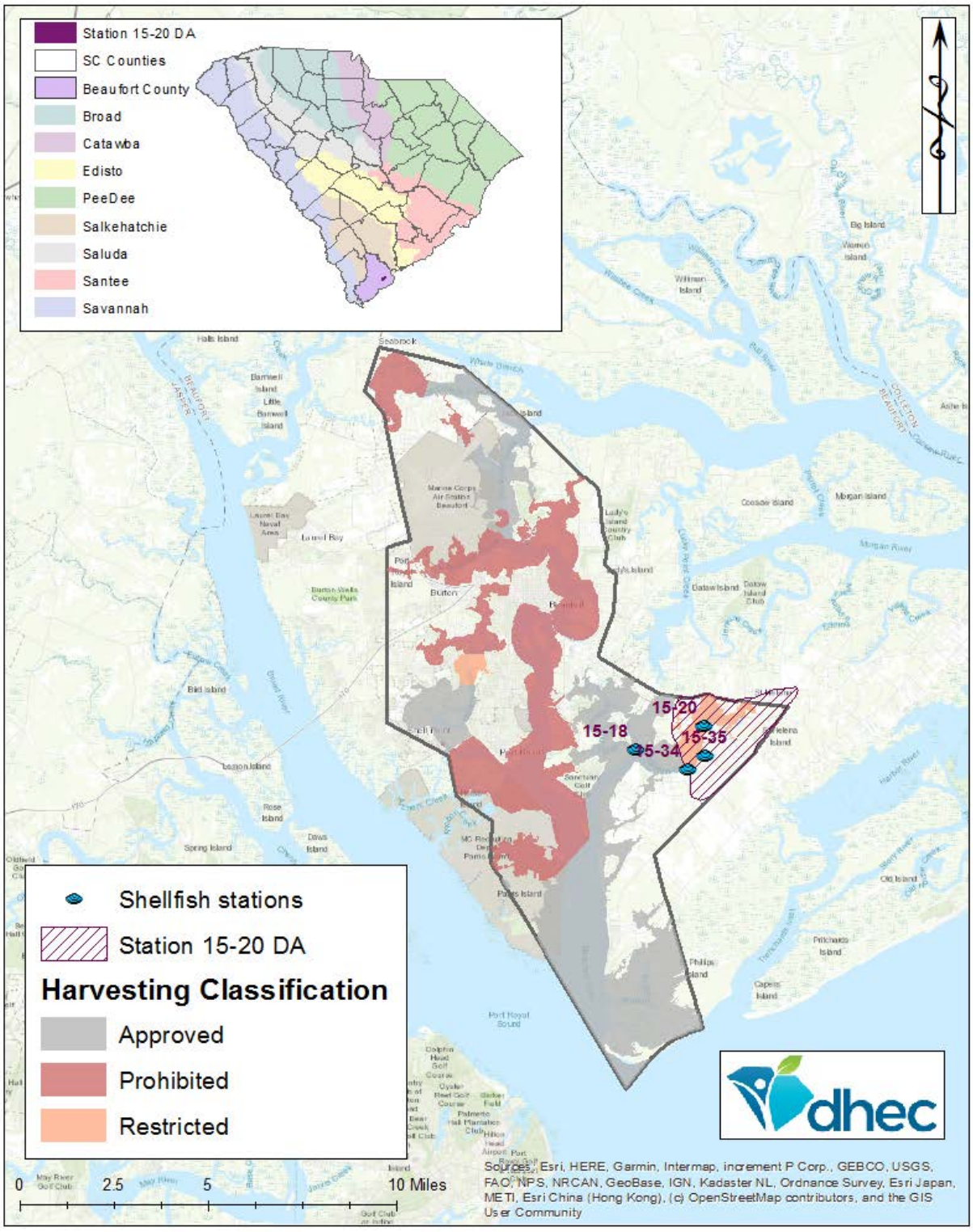


Figure 3. Shellfish management area 15 and Capers Creek shellfish monitoring stations and shellfish harvesting classifications for 2020-2021 season.

2.0 Water Quality Assessment

The National Shellfish Sanitation Program (NSSP) allows shellfish growing areas to be classified using either total or fecal coliform, and application of either standard to different water bodies within the state. There are also two sampling strategies for the application of the standards:

a) Adverse pollution control,
b) Systematic random sampling (US FDA, 2011 Revision).

The SCDHEC Shellfish Program currently utilizes the SRS strategy within SFMA 15 instead of sampling under adverse pollution control conditions. To ensure random sampling, sampling dates are computer-generated before the beginning of each quarterly period. Due to shipping requirements and manpower constraints, samples are collected on Mondays, Tuesdays, or Wednesdays (SCDHEC November 2019).

To comply with NSSP guidelines, a minimum of thirty samples are required to be collected and analyzed from each station during the review period, which is three years.

For classification purposes, samples are collected according to the SRS strategy for 12 months between January 1st and December 31st, for three years. This allows for a maximum of 36 samples per station for three years yet provides a six-sample "cushion" (above the NSSP required 30 minimum) for broken samples, lab error, breakdowns, etc. This also allows each annual report to meet the NSSP Triennial Review sampling criteria (SCDHEC November 2019).

In addition to bacteriological samples, surface water temperatures are measured using a hand-held, laboratory-quality calibrated thermometer. Salinities are measured in the laboratory using an automatic temperature compensated refractometer. Additional field data collected during samplings are ambient air temperature, wind direction, tidal stage, date, and time of sampling (SCDHEC November 2019).

3.0 Source Assessment

Pathogens, which are usually difficult to detect, cause disease, and make full-body contact recreation in lakes, streams, beaches a risk to public health. Indicators such as fecal coliform, total coliform, enterococcus, or E. coli bacteria are easy to measure, have similar sources as pathogens, and persist in surface waters for a similar or longer length of time. These bacteria are not in themselves disease-causing but indicate the potential presence of organisms that may result in illness.

There are many sources of pathogen pollution in surface waters. These sources may be classified as point and nonpoint sources. Point sources are generally defined as pollutant loads discharged at a specific location from pipes, outfalls, ditches, and conveyance channels from either municipal wastewater treatment plants, industrial waste treatment facilities, or MS4s. Nonpoint source pollution originates from multiple sources that are unregulated over a relatively large area. Nonpoint sources can be divided into source activities related either to land or water use and include failing septic tanks, improper animal keeping practices, forestry practices, as well as urban, and rural runoff. With the implementation of technology-based controls, pollution from continuous point sources, such as factories and wastewater treatment facilities, has been greatly reduced. These point sources are required by the CWA to obtain an NPDES permit. In South Carolina, NPDES permits require that continuous dischargers of treated sanitary wastewater meet the state standard for fecal coliform at the point of discharge.

Non-continuous point sources are required to obtain NPDES permits include stormwater discharges from MS4s, industrial activities, and construction sites. Each may be a source of pathogens. These sources are expected to meet the percentage reductions as prescribed in this TMDL or the existing instream standard for the pollutant(s) of concern, to the maximum extent practicable (MEP), through compliance with the terms and conditions of their NPDES permit.

3.1 Point Sources

3.1.1 Continuous Point Sources

Municipal and private sanitary wastewater treatment facilities may be sources of pathogens or fecal coliform bacteria when not meeting limits for fecal coliform bacteria. However, if these facilities are discharging wastewater that meets their permit limits, they are not causing or contributing to impairment provided that a daily maximum limit is being met as specified in the TMDL. If any of these facilities are not meeting their permit limits, enforcement actions/mechanisms are in place.

Currently, there are no continuous points sources within Capers Creek. Future NPDES dischargers to Capers Creek are required to comply with the load reduction prescribed in the WLA and demonstrate consistency with the assumptions and requirements of the TMDL.

3.1.2 Non-Continuous Point Sources

Non-continuous point sources include all NPDES-permitted stormwater discharges, including current and future MS4s, construction and industrial discharges covered under permits numbered SCS and SCR and regulated under *SC Water Pollution Control Permits*: R.61-9, §122.26(b)(4),(7),(14) - (21) (SC DHEC 2011). All regulated MS4 entities have the potential to contribute to fecal coliform bacteria loading, other bacteria and pathogens in the delineated drainage area used in the development of this TMDL and may be subject to the WLA portion of the TMDL.

The South Carolina Department of Transportation (SCDOT) is one of the designated MS4s within Capers CreekTMDL watershed. The SCDOT operates under NPDES MS4 Permit SCS040001 and owns and operates roads within the watershed. However, the Department recognizes that SCDOT is not a traditional MS4 in that it does not possess statutory taxing or enforcement powers. SCDOT does not regulate landuse or zoning, issue building, or development permits (Figure 4). Based on the information available at the time of TMDL development there are no SCDOT facilities located in the Capers Creek watershed.

The other designated MS4 in the watershed is Beaufort County and operates under NPDES MS4 Permit SCR031301. Beaufort County has elected to run its MS4 program for the unincorporated areas of the county in which another MS4 is not operating. Municipalities excluded from countywide coverage are the cities of Beaufort, Bluffton, Hilton Head Island, and Port Royal (Figure 5). For Beaufort County's stormwater outfall locations and stormwater drainage network within the Capers Creek watershed, please see Figure 6 and Figure 7, respectively.

Beaufort County is subject to the wasteload allocation prescribed in this TMDL document and will be responsible for submitting a TMDL monitoring plan within one year from the approval date of this document by the US EPA.

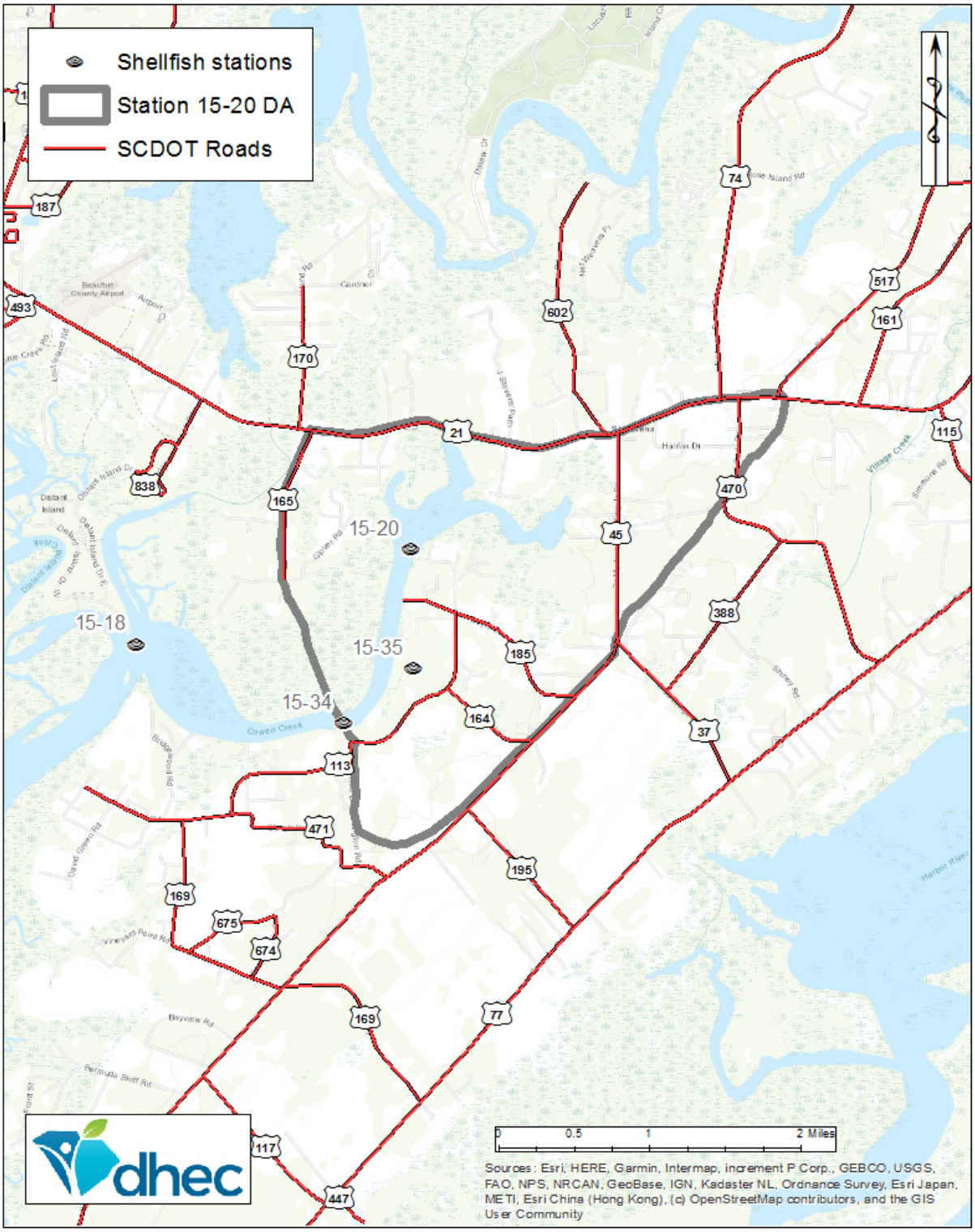


Figure 4. SCDOT owned and operated roads within Capers Creek TMDL watershed.

Future permitted sanitary sewer or stormwater systems in Caper's Creek watershed are required to comply with the load reductions prescribed in the WLA and demonstrate consistency with the assumptions and requirements of the TMDL.

Industrial facilities that have the potential to cause or contribute to a violation of a water quality standard due to stormwater discharges are covered by the NPDES Stormwater Industrial General Permit (SCR000000). Construction activities are usually covered by the NPDES Stormwater Construction General Permit from SCDHEC (SCR100000). Where the construction has the potential to affect the water quality of a water body with a TMDL, the Stormwater Pollution Prevention Plan (SWPPP) for the site must address any pollutants of concern and adhere to any waste load allocations in the TMDL. Note that there may be other stormwater discharges not covered under permits numbered SCS and SCR that occur in the referenced watershed. These activities are not subject to the WLA portion of the TMDL.

Like regulated MS4s, potentially designated MS4 entities (as listed in 64 FR, 235, P.68837) or other unregulated MS4 communities located in the Capers Creek watershed have the potential to contribute fecal coliform and other pollutants in stormwater runoff. The unregulated entities within this watershed will be subject to the LA portion for these TMDLs.

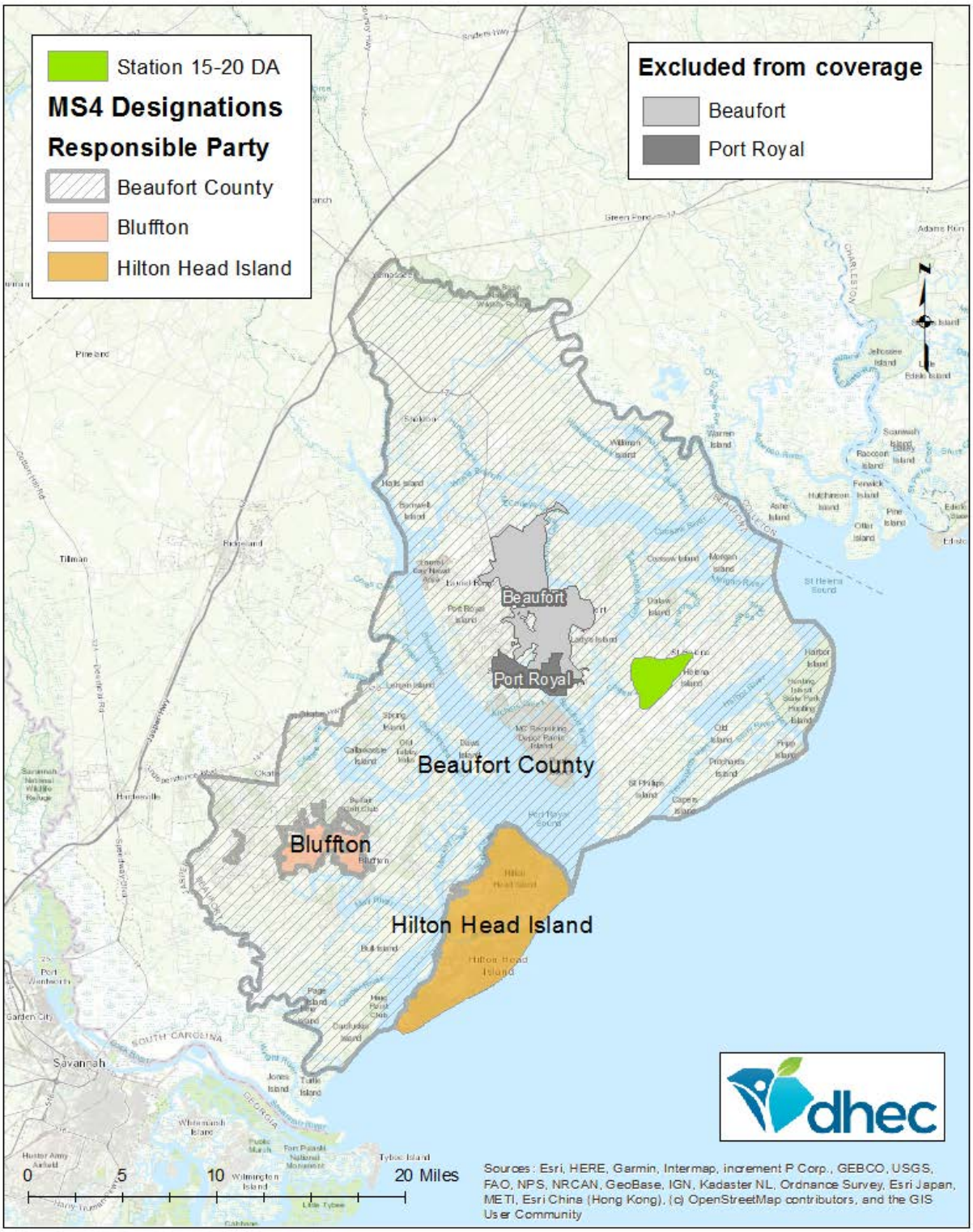


Figure 5. Beaufort County's MS4 permit coverage area is shown on the map above. It should be noted that, Beaufort County does not administer the MS4 programs of the cities of Beaufort, Bluffton, Hilton Head Island, Port Royal. These exception are shown and labeled on the map.

Sanitary sewer overflows (SSOs) are considered non-continuous point sources. SSOs to surface waters have the potential to severely impact water quality. It is the responsibility of the NPDES wastewater discharger, or collection system operator for non-permitted 'collection only' systems, to ensure that releases do not occur. Unfortunately releases to surface waters from SSOs are not always preventable or reported. BJW&SA has limited number of sewer lines in Capers Creek watershed and therefore the potential of SSOs exists.

The Department acknowledges that progress with the assumptions and requirements of the TMDL by MS4s is expected to take one or more permit iterations. Progress towards achieving the WLA reduction for the TMDL may constitute MS4 compliance with its stormwater management plan (SWMP), provided the Maximum Extent Practicable (MEP) definition is met, even where the numeric percent reduction may not be achieved in the interim.

3.2 Nonpoint Sources

Nonpoint source pollution is defined as pollution that is not released through pipes but rather originates from multiple sources over a relatively large area. Nonpoint sources can be divided into source activities related either to land or water use including failing septic tanks, improper animal-keeping practices, agriculture, forestry practices, wildlife, and urban and rural runoff.

Wildlife, agricultural activities, grazing animals, septic tanks, and other nonpoint source contributors located within unregulated areas (outside the permitted area) may contribute to fecal coliform loadings in the Capers Creek watershed. Nonpoint sources located in unregulated areas are subject to the LA and not the WLA of the TMDL document.

3.2.1 Agricultural Activities

Agricultural activities that involve livestock or animal wastes are potential sources of bacterial contamination of surface waters. Fecal matter can enter the waterway via runoff from the land or by direct deposition into the stream. Owners/operators of most commercial animal growing operations are required by R. 61-43, Standards for the Permitting of Agricultural Animal Facilities, to obtain permits for the handling, storage, treatment (if necessary) and disposal of the manure, litter and dead animals generated at their facilities (SC DHEC 2002). The requirements of R. 61-43 are designed to protect water quality and there is a reasonable assurance that facilities operating in compliance with this regulation should not contribute to downstream water quality impairments. In addition to the state permit, animal operations that are considered Concentrated Animal Feeding Operations (CAFOs) are also required to have an NPDES Permit if they have a discharge to

surface waters. There are currently no permitted CAFOs in South Carolina. Currently, there are no regulated agricultural operations within Capers Creek watershed.

3.2.2 Land Application of Industrial, Domestic Sludge or Treated Wastewater

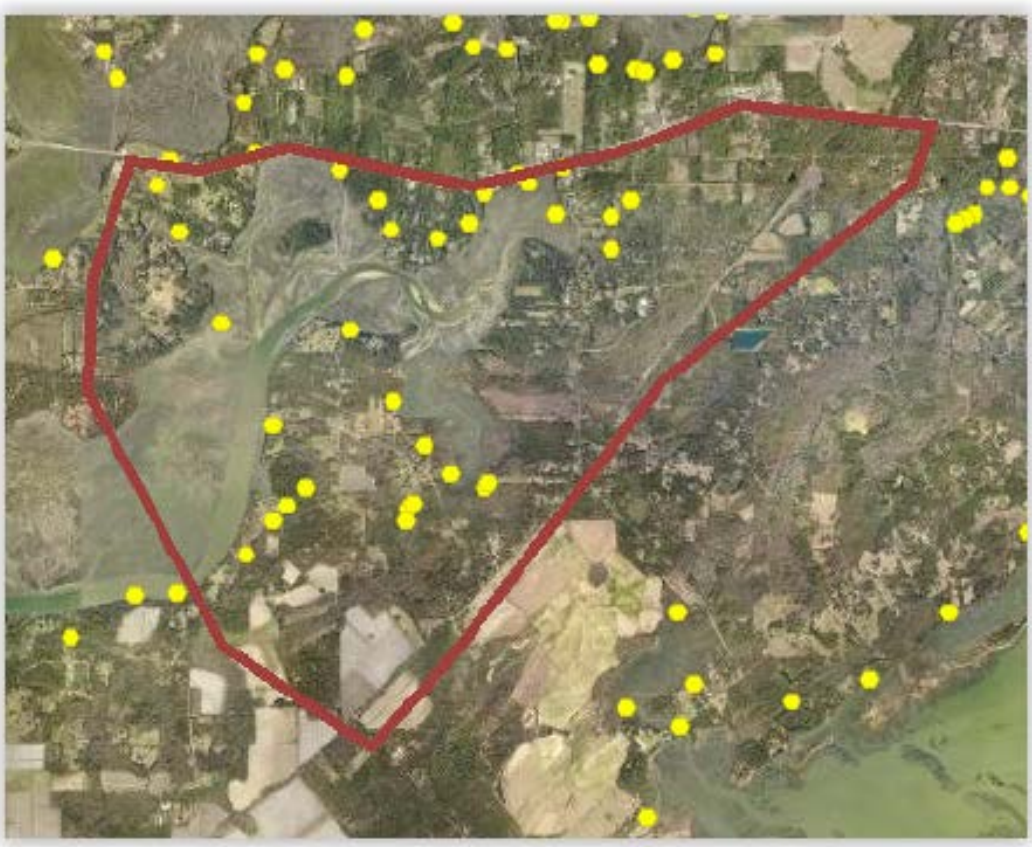
NPDES-permitted industrial and domestic wastewater treatment processes may generate solid waste bi-products, also known as sludge. In some cases, facilities may be permitted to land apply sludge at designated locations and under specific conditions. There are also some NPDES-permitted facilities authorized to land apply treated effluent at designated locations and under specific conditions. Land application permits for industrial and domestic wastewater facilities may be covered under SC Regulation 61-9 (SC DHEC 2011), Sections 503, 504, or 505.

It is recognized that there may be operating, regulated land application sites located in this watershed. If properly managed, waste is applied at a rate that ensures pollutants will be incorporated into the soil or plants and pollutants will not enter streams. Land application sites can be a source of fecal coliform bacteria and stream impairment if not properly managed. Similar to AFO land application sites, the permitted land application sites described in this section are not allowed to directly discharge to surface waters in Capers Creek watershed. Direct discharges from land application sites to surface waters of the State are illegal and are subject to enforcement actions by the SCDHEC. Currently, there are no NPDES permitted facilities with a land application permit of treated wastewater within Capers Creek watershed.

3.2.3 Urban and Suburban Stormwater Runoff

Dogs, cats, and other domesticated pets are the primary source of fecal coliform as well as other bacteria and viruses deposited on the urban and suburban landscape. Other wildlife such as resident waterfowl, squirrels, rodents, raccoons, geese, pigeons and other birds, can contribute to the bacteria load.

Similar to regulated MS4s, potentially designated MS4 entities as listed in FR 4, Appendix 7 (Federal Register 1999), or other unregulated MS4 communities located in Capers Creek watershed may have the potential to contribute to bacteria loadings in stormwater runoff.



Note that the map above was created using Beaufort County's web-based GIS platform, and the size and boundary of the watershed are approximate.

Figure 6. Beaufort County stormwater outfall locations.

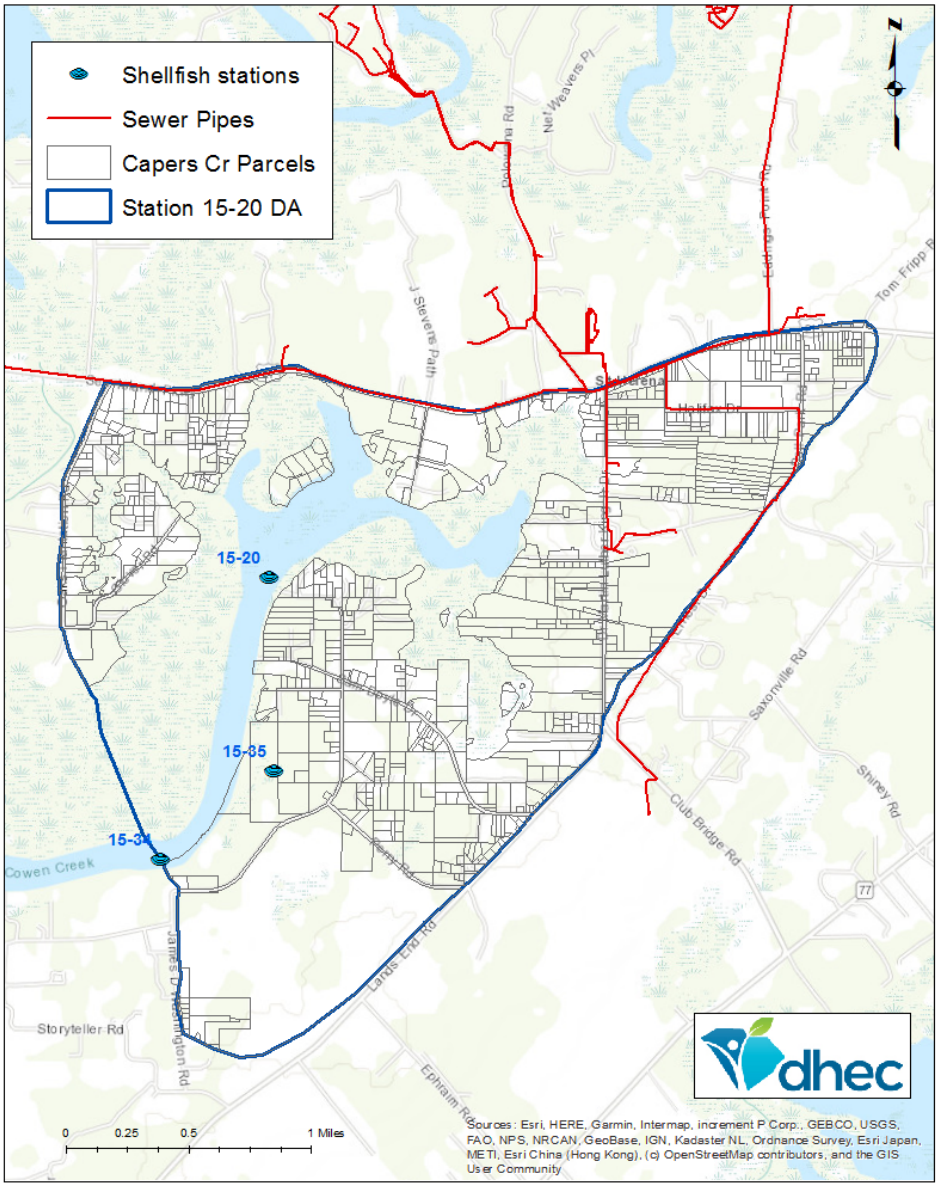
Note that the map above was created using Beaufort County's web-based GIS platform.

Figure 7. Beaufort County stormwater drainage network.

3.2.4 Failing Septic Systems

Improperly maintained and failing septic tanks can contribute to bacterial contamination of downstream water bodies. Untreated sewage from failing septic systems may have the potential to enter surface waters in this watershed. Although loading to streams from failing septic systems is likely to be a continual source, wet weather events can increase the rate of transport of effluent from failing septic systems.

Beaufort Jasper Water and Sewer (BJW&SA) authority have shared their sewer related GIS files with the Department. Based on this information, the majority of the homes in station 15-20 watershed are not connected to the sewer system. Based on the 2010 U.S. Census and county parcel data, there are approximately 1081 housing units with a population of 2231 people (Figure 8).



Source: Data courtesy of BJW&SA.

Figure 8. BJW&SA sewer lines within the station 15-20 drainage area.

3.2.5 Wildlife

Resident, migrant and seasonal wildlife' wastes that are carried into nearby streams by runoff following rainfall or deposited directly in or adjacent to streams may be a source of fecal coliform. According to the study conducted by South Carolina Department of Natural Resources (SCDNR) in 2013, deer density there are approximately 15 to 45 deer per square mile in this watershed (SC DNR 2013). The study estimated deer density based on suitable habitats such as forests, croplands, and pastures. Data compiled by Yagow show the fecal

indicator bacteria production can be 347 x 10^6 mpn/deer/day, 113 x 10^6 mpn/raccoon/day, and 4,853 x 10^6 mpn/duck/day (Yagow 2001).

3.2.6 Marinas, Boating Activities, and Structures

Currently, there are no marinas within Capers Creek watershed however, there are private docks along Capers Creek.

There are 3 main types of marine sanitation devices (MSD) that are suitable for different kinds of marine vessels and have varying effluent treatment levels. Every vessel with an MSD installed as of January 30, 1980, must be equipped with one of the three types of MSDs (The United States Code 2012). Properly-maintained MSDs should not be causing or contributing to bacteria exceedances in impaired waters. It is prohibited under Federal law to discharge untreated sewer from vessels within navigable waters as stated in the Clean Vessel Act.

4.0 Cumulative Probability Method

Cumulative probability distributions were used to calculate existing conditions and percent reductions necessary to meet shellfish harvesting waters standards for fecal coliform in Capers Creek.

Data collected by DHEC from 2008 through 2017 were used For the calculation of the cumulative probability distribution.

To create a cumulative probability graph, water quality measurements were first sorted in ascending order to determine rank and then assigned a probability plotting position using the following function:

$$p(\%) = \frac{100M}{N+1}$$

where, M = rank and N = number of samples (Novotny, 2004).

In this case, the log base 10 of fecal coliform is used. If the data follows a log-normal distribution, the data points on the plot will approximate a straight line (the normal distribution). This straight line is then compared to the water quality standard at the appropriate percentile. For shellfish waters in South Carolina, the TMDL target equates to 43 mpn/100ml minus a 5% margin of safety (MOS) (40.9 mpn/100ml) at the 90th percentile. If the fit line crosses the 90th percentile reference line above the standard, the site is considered to not meet the standard for single sample maximums. If the line crosses below the standard reference the site does meet the water quality standard. The evaluation is

consistent with the NSSP approach under a systematic random sampling scheme (which is used in place of adverse condition sampling). If the data do not meet the single sample standard, a line is drawn parallel to the original normal distribution line that intersects the standard at the 90th percentile point. Drawing the line parallel to the original distribution assumes that the coefficient of variation remains the same for the original data and the desired water quality data (Novotny, 2004). The necessary percent reduction is calculated as the difference between the distributions at the 90th percentile point:

$$\frac{\text{Existing Load} - (\text{Standard} - \text{MOS})}{\text{Existing Load}} * 100$$

Based on an evaluation of 2008-2017 fecal coliform data, station 15-20 exceeds the single standard sample maximum (SSM) criterion. The SSM criterion will be targeted for the calculation of a TMDL for station 15-20.

If sufficient approximations of tidal exchange and flow patterns were available, this method could be extended to calculate the total maximum daily fecal coliform loading in mpn/day for locations within the watershed. The average daily tidal exchange would be multiplied by the water quality standard of 43 mpn/100ml and a conversion factor. This number would represent the maximum daily load for all waters within the delineated watershed, whether impaired or not. There are not sufficient data to calculate the loadings for each station which is a limitation of this method. See Figure 8 for the cumulative probability plot for station 15-20.

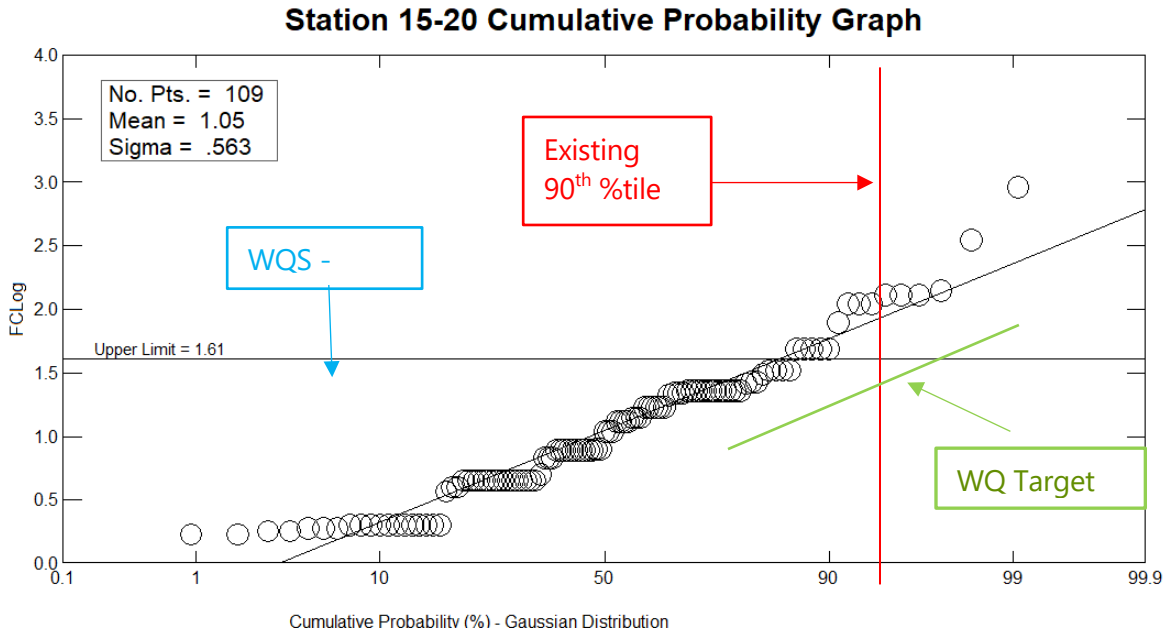


Figure 9. Cumulative probability plot for station 15-20.5.0 Development of the TMDLs

5.0 Development of the TMDL

A total maximum daily load (TMDL) for a given pollutant and water body is comprised of the sum of individual wasteload allocations (WLAs) for point sources, and load allocations (LAs) for both nonpoint sources and natural background levels. Also, the TMDL must include a margin of safety (MOS), either implicitly or explicitly, to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving water body. Conceptually, this definition is represented by the equation:

$$TMDL = \sum WLAs + \sum LAs + MOS$$

The TMDL is the total amount of pollutant that can be assimilated by the receiving water body while still achieving compliance with WQS. In TMDL development, allowable loadings from all pollutant sources that cumulatively amount to no more than the TMDL must be established and thereby provide the basis to establish water quality-based controls.

For most pollutants, TMDLs are expressed as a mass load (e.g., kilograms per day). For bacteria, however, TMDLs are expressed in terms of number (#), colony-forming units (cfu), organism counts (or resulting concentration), mpn (most probable number), or percent (%) reductions per 40 CFR 130.2(l). Refer to Table 3 for TMDL allocations for Capers Creek.

5.1 Critical Conditions

Critical conditions are the "worst-case" environmental conditions for exceedance of water quality standards and which occur at an acceptable frequency (US EPA 1999). Due to the tidal and complex hydrologic nature of this system, it is unclear what a critical flow would be. By including all data in the calculations, the inclusion of the critical condition is implicit.

5.2 Wasteload Allocation

The WLA is the portion of the TMDL allocated to NPDES-permitted point sources (US EPA 1991). The wasteload summation is determined by subtracting the margin of safety and the sum of the load allocation from the total maximum daily load. Note that all illicit dischargers, including SSOs, are illegal and not covered under the WLA of this TMDL.

5.2.1 Continuous Point Sources

Capers Creek is classified as SFH waters and dischargers to these waters are allowable if the Department deems appropriate. Currently, there are no continuous NPDES-permitted discharges to the affected TMDL watersheds with a fecal coliform effluent limit on their

NPDES permit. Future continuous discharges are required to meet the prescribed loading for the pollutant of concern based on permitted flow and assuming an allowable permitted single sample maximum of 43/100 ml.

5.2.2 Non-Continuous Point Sources

Non-continuous point sources include all NPDES-permitted stormwater discharges, including current and future MS4s, construction and industrial discharges covered under permits numbered SCS and SCR and/or regulated under South Carolina Water Pollution Control Permits: R61-9, §122.26(b)(4),(7),(14)-(21) (SC DHEC 2014). Illicit discharges, including SSOs, are not covered under any NPDES permit and are subject to compliance and enforcement mechanisms.

All areas defined as "Urbanized Area" by the US Census are required under the NPDES Phase II Stormwater Regulations to obtain a permit for the discharge of stormwater. Other non-urbanized areas may be required under the NPDES Phase II Stormwater Regulations to obtain a permit for the discharge of stormwater.

Regulated MS4s are subject to the WLA component of this TMDL; however, there may be other unregulated MS4s located in the watershed that is subject to the LA component of this TMDL. At such time that the referenced entities or other future unregulated entities become regulated NPDES MS4 entities and subject to applicable provisions of SC Regulation 61-68, they will be required to meet load reductions prescribed in the WLA component of the TMDL. This also applies to future discharges associated with industrial and construction activities that will be subject to R61-9, §122.26(b)(4),(7),(14)-(21) (SC DHEC 2011).

Waste load allocations for stormwater discharges are expressed as a percentage reduction instead of a numeric concentration due to the uncertain nature of stormwater discharge volumes and recurrence intervals. Stormwater discharges are required to meet the percentage reduction or the existing instream standard for the pollutant of concern. The percent reduction is based on the maximum percent reduction (critical condition) necessary to achieve target conditions. Table 3 presents the reductions needed for the impaired segment. The percent reductions identified for the impaired station in this document also apply to the fecal coliform waste load attributable to those areas of the watershed which are covered or will be covered under NPDES MS4 permits.

As appropriate information is made available to further define the pollutant contributions for the permitted MS4, an effort can be made to revise these TMDLs. This effort will be

initiated as resources permit and if deemed appropriate by the Department. For the Department to revise these TMDLs the following information should be provided, including but not limited to:

- An inventory of service boundaries of the MS4 area covered in the MS4 permit provided as ArcGIS compatible shapefiles.
- An inventory of all existing and planned stormwater discharge points, conveyances, and drainage areas for the discharge points, provided as ArcGIS compatible shapefiles. If drainage areas are not known, any information that would help estimate the drainage areas should be provided. The percentage of impervious surfaces within the MS4 area should also be provided.
- Appropriate and relevant data should be provided to calculate individual pollutant contributions for the MS4 permitted entities. At a minimum, this information should include precipitation, water quality, and flow data for stormwater discharge points.

Compliance with terms and conditions of existing and future NPDES sanitary and stormwater permits (including all construction, industrial, and MS4) will effectively implement the WLA and demonstrate consistency with the assumptions and requirements of the TMDL. However, the Department recognizes that the SCDOT is not a traditional MS4 in that it does not possess statutory taxing or enforcement powers. The SCDOT does not regulate land use or zoning, issue building, or development permits.

5.3 Load Allocation

The Load Allocation (LA) applies to the nonpoint sources of fecal coliform bacteria which include unregulated processes/entities and is expressed both as a load and as a percent reduction. The LA is calculated as the difference between the target concentration under the critical condition and the point source WLA. The LA for station 15-20 in Capers Creek expressed in tables as percent reduction. The Department believes that meeting the percent reduction or the WQS, whichever is less restrictive, will effectively protect the shellfish harvesting uses within Capers Creek watershed. Currently, SCDOT and Beaufort County are the only regulated MS4s located in the drainage area; these entities are subject to the WLA component of the TMDL.

There may be other unregulated stormwater discharges located in the watershed that are subject to LA components of this TMDL which currently are not NPDES permitted. At such time that the referenced entities or other future unregulated entities become regulated NPDES MS4 entities and subject to applicable provisions of SC Regulation 61-68D, they will be required to meet load reduction prescribed in the WLA component of the TMDL. This also applies to future discharges associated with industrial and construction activities will be subject to R. R61-9 §122.26(b)(4),(7),(14) - (21) (SC DHEC 2011).

5.4 Existing Load

Due to the tidal nature of the system, it is difficult to calculate an existing load for this system. For this reason, existing conditions are given as a concentration. Existing concentration is calculated as the concentration of fecal coliform bacteria at the 90th percentile point based on the normal line fit to the monitoring data. The existing load for station 15-20 was calculated to be 59.12 mpn/100 ml (Table 3).

5.5 Margin of Safety

A margin of safety (MOS) allows for an accounting of the uncertainty in the relationship between pollutant loads and receiving water quality (US EPA, 1999). Incorporation of a MOS can be done either explicitly within the TMDL calculation or implicitly by using conservative assumptions (US EPA 1991). This TMDL has an explicit 5% MOS. All water quality data is compared to 40.9/100ml which is the single sample maximum water quality standard minus five percent MOS. There is also an unspecified implicit margin of safety in the percent reduction calculations derived from the cumulative probability graphs due to the assumption of independence of the data points (Novotny, 2004).

5.6 Calculation of the TMDL

A TMDL represents the loading capacity (LC) of a water body, which is the maximum loading a waterbody can receive without exceeding water quality standards (US EPA, 1999). The TMDL is the sum of the WLA for point sources, the LA for non-point sources and natural background, and a margin of safety (MOS). The TMDL can be represented by the equation (US EPA, 2001):

$$TMDL = LC = WLA + LA + MOS$$

The equation above results in a 30.9% reduction of fecal coliform loading to consistently meet the instantaneous SSM water quality standard for fecal coliform. Calculated TMDL reductions applicable to the impaired station are presented in Table 3. Using the same 2008-2017 data set, a geometric mean was also calculated. The overall geomean was determined to be less than 14 mpn/100 ml; therefore, this criterion is being being met and a reduction for the geometric mean is not necessary.

Based on the information available at this time, the portions of the watersheds that drain directly to a regulated MS4 and that which drains through the non-regulated MS4 has not been clearly defined. Loading from both types of sources (regulated and non-regulated)

typically occurs in response to rainfall events, and discharge volumes as well as recurrence intervals are largely unknown. Therefore, where applicable, the regulated MS4 is assigned the same percent reduction as the non-regulated sources in the watershed. Compliance with the MS4 permit regarding this TMDL document is determined at the point of discharge to the waters of the state. The regulated MS4 entity is only responsible for implementing the TMDL WLA by following their MS4 permit requirements and is not responsible for reducing loads prescribed as LA in this TMDL document.

5.7. Reasonable Assurance

NPDES permits are issued for regulated dischargers, including continuous and non-continuous sources of pathogenic bacteria. In shellfish harvesting waters, the applicable water quality standard indicator is fecal coliform bacteria. Continuous discharges are required to target the fecal coliform water quality standard at the point of discharge. For regulated non-continuous discharges, the fecal coliform standard should be targeted to the maximum extent practicable. There may be other regulated activities present that could contribute to fecal coliform loadings in the watershed. New septic tanks, animal feeding operations (AFOs), land application of treated sludge or wastewater also require permits that reduce the potential for runoff of bacteria into waters of the State.

Other unregulated sources of fecal coliform loadings in the watershed may include wildlife, improper agricultural or silvicultural activities, urban and suburban runoff. These sources may be reduced through means such as best management practices, local ordinances, outreach education efforts as well as section 319 grant opportunities. SCDHEC has fostered effective partnerships between other federal, state, and local entities to help reduce the potential for runoff of bacteria into waters of the State. Collectively, and once implemented, these reduction mechanisms will provide reasonable assurance that the recreation use water quality standard will be attained in this watershed.

Table 3. TMDLs for Capers Creek watershed. Loads are expressed as the most probable number (mpn) per 100 ml and allocations are expressed as % reductions.

Station	90th %tile of Existing Load (mpn/ 100ml)	TMDL [1, 2] (mpn/ 100ml)	WQ Target (mpn/ 100ml)	Margin of Safety (mpn/100ml)	WLA			LA
					Continuous Sources[3] (mpn/100ml)	Non-Continuous [4, 6] Sources (% Reduction)	Non-Continuous SCDOT [5, 6] (% Reduction)	% Reduction to Meet LA [6]
15-20	59.12	43	40.85	2.15	See Note Below	30.9	30.9	30.9

Table Notes:

1. TMDL is expressed as a concentration. If daily average tidal exchange estimates were available, this number could be converted to load in mpn/day by multiplying flow by concentration and a conversion factor.
2. TMDL Target = SFH water WQS for single sample maximum not to exceed 43 mpn/100 ml.
3. WLA is expressed as a daily maximum of 43 mpn/100 ml. There are no continuous dischargers at this time. Future continuous discharges are required to meet the prescribed loading for the pollutant of concern. Loadings are developed based upon the permitted flow and an allowable permitted maximum concentration of 43 mpn/100ml.Percent reduction applies to all NPDES-permitted stormwater discharges, including current and future MS4, construction, and industrial discharges covered under permits numbered SCS & SCR. Stormwater discharges are expressed as a percentage reduction due to the uncertain nature of stormwater discharge volumes and recurrence intervals. Stormwater discharges are required to meet percentage reduction or the existing instream standard for the pollutant of concern in accordance with their NPDES Permit.
4. By implementing the best management practices that are prescribed in either the SCDOT annual SWMP or the SCDOT MS4 Permit to address fecal coliform, the SCDOT will comply with these TMDLs and its applicable WLA to the maximum extent practicable (MEP) as required by its MS4 permit.
5. Percent reduction applies to the existing concentration.

6.0 Implementation

The implementation of both point (WLA) and non-point (LA) source components of the TMDL are necessary to bring about the required reductions in fecal coliform contributions to Capers Creek to achieve water quality standards. Using existing authorities and mechanisms, an implementation plan providing information on how the point and non-point sources of pollution are being abated or may be abated to meet water quality standards is provided. Sections 6.1 and 6.2 and their subsections presented below correspond with sections 3.1 and 3.2 and their subsections of the source assessment presented in the TMDL document. As the implementation strategy progresses, DHEC may continue to monitor the effectiveness of implementation measures and evaluate water quality where deemed appropriate.

Point sources are discernible, confined, and discrete conveyances of pollutants to a water body including but not limited to pipes, outfalls, channels, tunnels, conduits, man-made ditches, etc. The Clean Water Act's primary point source control program is the NPDES. Point sources can be broken down into continuous and non-continuous point sources. Some examples of a continuous point source are domestic and industrial WWTF. Non-continuous point sources are related to stormwater and include MS4s and construction activities, etc. Current and future NPDES discharges in the referenced watersheds are required to comply with the load reductions prescribed in the WLA.

Nonpoint source pollution originates from multiple sources over a relatively large area. It is diffuse and indistinct from other sources of pollution. It is generally caused by the pickup and transport of pollutants from rainfall moving over and through the ground. Nonpoint sources of pollution may include but are not limited to wildlife, agricultural activities, illicit discharges, failing septic systems, urban and suburban runoff. Nonpoint sources located in unregulated portions of the watershed are subject to the LA and not the WLA of the TMDL document.

South Carolina has several tools available for implementing the non-point source component of this TMDL. The *Implementation Plan for Achieving Total Maximum Daily Load Reductions from Nonpoint Sources for the State of South Carolina* (SC DHEC, 1998) document is one example. Another key component for interested parties to control pollution and prevent water quality degradation in the watershed would be the establishment and administration of a program of Best Management Practices (BMPs). Best management practices may be defined as a practice or a combination of practices that have been determined to be the most effective, practical means used in the prevention and/or reduction of pollution.

Interested parties (local stakeholder groups, universities, local governments, etc.) may be eligible to apply for CWA §319 grants to install BMPs that will implement the LA portion of these TMDLs and reduce nonpoint source fecal coliform loadings to impaired areas. Congress amended the CWA in 1987 to establish the §319 Nonpoint Source Management Program. Under §319, States receive grant money to support a wide variety of activities including the restoration of impaired waters. TMDL implementation projects are given the highest priority for §319 funding. CWA §319 grants are not available for implementation of the WLA component of this TMDL but may be available for the LA component within permitted MS4 jurisdictional boundaries. Additional resources are provided in Section 7.0 of this TMDL document.

SCDHEC will work with the agencies in the area to provide nonpoint source education in this watershed and the surrounding watersheds. Local sources for nonpoint source education include Charleston Counties Soil and Water Conservation Districts, local Natural Resources Conservation Service, Clemson Extension Service, South Carolina Department of Natural Resources, S.C. Sea Grant Extension Program.

The Department recognizes that adaptive management/implementation of these TMDLs might be needed to achieve the water quality standard and we are committed to targeting the load reductions to improve water quality in Capers Creek. As additional data and/or information become available, it may become necessary to revise and/or modify the TMDL targets accordingly.

6.1 Implementation Strategies

Implementation of both, point (WLA) and nonpoint source (LA) components of the TMDL are necessary to reduce fecal coliform loading and achieve WQS in Capers Creek watershed.

The strategies presented in this section of the document for implementation of the referenced TMDL are not inclusive and are to be used only as guidance. The strategies are informational suggestions that may lead to the required load reductions being met for the referenced watersheds while demonstrating consistency with the assumptions and requirements of the TMDLs. Application of certain strategies provided within may be voluntary and are not a substitute for actual NPDES permit conditions.

6.1.1 Continuous Point Sources

Continuous point source WLA reductions are implemented through NPDES permits. Existing and future continuous dischargers are required to meet the prescribed WLA for the

pollutant of concern and demonstrate consistency with the assumptions and requirements of the TDML. Currently, there are no direct NPDES discharges to the Capers Creek Watershed.

6.1.2 Non-Continuous Point Sources

An iterative BMP approach as defined in the general stormwater NPDES MS4 permit is expected to provide a significant implementation of the WLA. Discovery and removal of illicit storm drain cross-connections is one important element of the stormwater NPDES MS4 permit. Public nonpoint source pollution education is another. Other permit requirements for implementing WLAs in approved TMDL documents will vary across water bodies, discharges, and pollutant(s) of concern. The allocation within a TMDL area can take many different forms – narrative, numeric, specified BMPs – and may be complemented by other special requirements such as monitoring.

The level of monitoring necessary, deployment of structural and non-structural BMPs, evaluation of BMP performance, and optimization or revisions to the existing pollutant reduction goals of the Stormwater Management Plan (SWMP) or any other plan is TMDL and watershed specific. Hence, it is expected that NPDES permit holders evaluate their existing SWMP or other plans in a manner that would effectively address the implementation of this TMDL with an acceptable schedule and activities for their permit compliance.

The Department (permit writers, TMDL project managers, and compliance staff) is willing to assist in developing or updating the referenced plan as deemed necessary. Please see Evaluating the Progress of MS4 Programs which provides additional information as it relates to evaluating the effectiveness of an MS4 Permit as it related to compliance with approved TMDLs.

Compliance with terms and conditions of existing and future NPDES sanitary and stormwater permits (including all construction, industrial, and MS4) may effectively implement the WLA and demonstrate consistency with the assumptions and requirements of the TMDL.

For SCDOT, existing and future NPDES MS4 permittees, compliance with terms and conditions of its NPDES permit is effective implementation of the WLA to the Maximum Extent Practicable (MEP). For existing and future NPDES construction and industrial stormwater permittees, compliance with terms and conditions of its permit is effective implementation of the WLA. Required load reductions in the LA portion of this TMDL can be implemented through voluntary measures and are eligible for CWA §319 grants.

The Department acknowledges that progress with the assumptions and requirements of the TMDL by MS4s is expected to take one or more permit iteration. Achieving the WLA reduction for the TMDL may constitute MS4 compliance with its SWMP, provided the MEP definition is met, even where the numeric percent reduction may not be achieved in the interim.

Regulated MS4 entities are required to develop an SWMP that includes the following: public education, public involvement, illicit discharge detection & elimination, construction site runoff control, post-construction runoff control, and pollution prevention/good housekeeping. These measures are not exhaustive and may include additional criteria depending on the type of NPDES MS4 permit that applies. These examples are recognized as acceptable stormwater practices and may be applied to unregulated MS4 entities or other interested parties in the development of an SWMP.

An informed and knowledgeable community is crucial to the success of a stormwater management plan () (US EPA, 2005). MS4 entities may implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on local water bodies and the steps that can be taken to reduce stormwater pollution. Some appropriate BMPs may be brochures, educational programs, storm drain stenciling, stormwater hotlines, tributary signage, and alternative information sources such as websites and bumper stickers.

The public can provide valuable input and assistance to an MS4 program and they may have the potential to play an active role in both development and implementation of the stormwater program where deemed appropriate. There are a variety of practices that can involve public participation such as public meetings/citizens panels, volunteer water quality monitoring, volunteer educators, community clean-ups, citizen watch groups, and "Adopt a Storm Drain" programs which encourage individuals or groups to keep storm drains free of debris and monitor what is entering local waterways through storm drains (US EPA, 2005). Illicit discharge detection and elimination efforts are also necessary. Discharges from MS4s often include wastes and wastewater from non-stormwater sources. These discharges enter the system through either direct connections or indirect connections. The result is untreated discharges that contribute to high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving water bodies (US EPA, 2005). Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health. MS4 entities may have a storm sewer system map that shows the location of all outfalls and to which waters of the US they discharge to. If not already in place, an ordinance prohibiting non-stormwater discharges into MS4 with appropriate

enforcement procedures may also be developed. Entities may also have a plan for detecting and addressing non-stormwater discharges. The plan may include locating problem areas through infrared photography, finding the sources through dye testing, removal/correction of illicit connections, and documenting the actions taken to illustrate that progress is being made to eliminate illicit connections and discharges.

A program might also be developed to reduce pollutants in stormwater runoff to their MS4 from construction activities. An ordinance or other regulatory mechanism may exist requiring the implementation of proper erosion and sediment controls on applicable construction sites. Site plans should be reviewed for projects that consider potential water quality impacts. It is recommended that site inspections should be conducted, and control measures enforced where applicable. A procedure might also exist for considering information submitted by the public (US EPA, 2005). For information on specific BMPs please refer to the SCDHEC Stormwater Management BMP Handbook online at: http://www.scdhec.gov/Environment/WaterQuality/Stormwater/BMPHandbook/

Post-construction stormwater management in areas undergoing new development or redevelopment is recommended because runoff from these areas has been shown to significantly affect receiving water bodies. Many studies indicate that prior planning and design for the minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management (US EPA, 2005). Strategies might be developed to include a combination of structural and/or nonstructural BMPs. An ordinance or other regulatory mechanism may also exist requiring the implementation of post-construction runoff controls and ensuring their long term-operation and maintenance. Examples of non-structural BMPs are planning procedures and site-based BMPs (minimization of imperviousness and maximization of open space). Structural BMPs may include but are not limited to stormwater retention/detention BMPs, infiltration BMPs (dry wells, porous pavement, etc.), and vegetative BMPs (grassy swales, filter strips, rain gardens, artificial wetlands, etc.)

Pollution prevention/good housekeeping is also a key element of stormwater management programs. Generally, this requires the MS4 entity to examine and alter their actions to ensure reductions in pollution are occurring. This could also result in a reduction of costs for the MS4 entity. It is recommended that a plan be developed to prevent or reduce pollutant runoff from municipal operations into the storm sewer system and it is encouraged to include employee training on how to incorporate pollution prevention/good housekeeping techniques. To minimize duplication of effort and conserve resources, the MS4 operator can use training materials that are available from EPA or relevant organizations (US EPA, 2005).

MS4 communities are encouraged to utilize partnerships when developing and implementing a stormwater management program. Watershed associations, educational entities, and state, county, and city governments are all examples of possible partners with resources that can be shared. For additional information on partnerships contact the SCDHEC Watershed Manager for the water body of concern online at https://scdhec.gov/environment/your-water-coast/watersheds-s-program-http://www.scdhec.gov/HomeAndEnvironment/Water/Watersheds/Contacts/

For additional information on stormwater discharges associated with MS4 entities please see the US EPA NPDES website online at https://www.epa.gov/npdes/stormwater-discharges-municipal-sources for information about the National Menu of BMPs, Urban BMP Performance Tool, Outreach Documents, etc.

The Department acknowledges that progress with the assumptions and requirements of the TMDL by MS4s is expected to take one or more permit iteration. Achieving the WLA reduction for the TMDL may constitute MS4 compliance with its SWMP, provided the MEP definition is met, even where the numeric percent reduction may not be achieved in the interim.

6.2 Nonpoint Sources

6.2.1 Urban and Suburban Stormwater Runoff

In estuaries, runoff is considered the leading cause of impairment. Runoff from urban and suburban areas is the result of imperviousness, population, and traffic density, and all activities connected with urban living (Novotny, 2003). Also, estuaries are saline environments and urban runoff, due to precipitation is freshwater. This freshwater runoff into the estuarine environments causes salinity variances, adversely affecting organisms that are adapted to high salinity. Several studies have shown that salinity fluctuations cause a decrease in biomass of organisms, change in species dominance, reduced growth, and survival, and other physiological stress. These studies recommend gaining control of salinity fluctuations may help improve estuarine habitats through the management of freshwater runoff from urban and suburban environments (Montague & Ley 1993, Mallin et al. 2008).

Potential BMPs for residential, industrial and commercial lots with impervious surfaces for consideration but not limited to are, capturing rain by either using rain barrels or rain pillow (for single-family residential units or other small buildings), or a rainwater collection system, such as a cistern, for later use in landscape watering or other non-potable uses. Another option would be, when appropriate, constructing rain gardens or wetlands to slow surface water runoff rates from impervious surfaces and to allow for percolation of runoff to recharge groundwater. Also, using porous pavements/materials allows runoff due to precipitation percolate hence reducing the runoff rate.

6.2.2 Agricultural Runoff

Agriculture is a complex and large industry with great potential to adversely affect the environment by nonpoint source runoff (Novotny 2003). Sources of fecal coliform bacteria of nonpoint source origins to the nearby water bodies from agricultural and silvicultural activities are livestock with uncontrolled access to riparian areas, improper manure application, and concentrated or pastured animal operations, etc. Pastureland without proper erosion control measures is overgrazed, or when grazing livestock are allowed to approach receiving waters are contributing to nonpoint source pollution. If these are controlled, and with additional BMPs, pollution from these lands can be minimized (Novotny 2003).

Agricultural BMPs can be vegetative, structural, or management-oriented. When selecting BMPs, it is prudent to keep in mind that nonpoint source related pollution occurs when a pollutant becomes available, is detached, and then transported to nearby receiving waters.

Therefore, for BMPs to be effective, the transport mechanism of the pollutant, fecal coliform, needs to be identified.

Fencing livestock is an effective way of confining the livestock in a certain area where BMPs are deployed; however, in certain cases, it may not be sufficient for the prevention of overland runoff. It may help to deploy additional BMPs such as a vegetative buffer with different growth rates behind the fence of where livestock are kept.

There are several state and federal assistance programs available to agricultural producers, and some of these are described below and electronic links for these programs are available under Section 7 of the TMDL document.

One of the programs that are available through USDA is the Environmental Quality Incentives Program (EQIP). This also is a voluntary conservation program for farmers and ranchers that promote agricultural production and environmental quality as national goals. Eligible participants receive financial and technical help from EQIP to install or implement structural and management-related BMPs. Further information is available in Section 7 of this document.

It is recommended that BMPs for all existing agricultural facilities be reviewed for their effectiveness and reduction of runoff.

6.2.3 Failing Septic Systems

Age, lack of maintenance, and improper use can cause septic systems to malfunction. Homeowner education about proper maintenance and repairing of their septic systems may help reduce runoff from these treatment systems. Also, encouraging homeowners to have their septic systems inspected and pumped on regular basis is another potential intervention for reducing bacterial runoff/contamination from these systems.

In addition to the resources cited in Section 7 of this document for the implementation of these TMDLs, Clemson Extension has developed a Home-A-Syst handbook that can help urban, suburban, and rural homeowners reduce sources of NPS pollution from their property. This document guides homeowners through a self-assessment, including information on proper maintenance practices for septic tanks. SCDHEC also employs a nonpoint source educator who can assist with the distribution of these tools as well as provide additional BMP information.

The Office of Coastal Resource Management (OCRM) has created a toolkit for homeowners and local governments which include tips for maintaining their systems. These septic systems Do's and Don'ts are as follows:

Septic System Dos and Don'ts from SCDHEC Office of Coastal Resource Management:

Dos:

- Conserve water to reduce the amount of wastewater that must be treated and disposed of by your system. Doing laundry over several days will put less stress on your system.
- Repair any leaking faucets or toilets. To detect toilet leaks, add several drops of food dye to the toilet tank and see if dye ends up in the bowl.
- Divert downspouts and other surface water away from your drain field. Excessive water keeps the soil from adequately cleansing the wastewater.
- Have your septic tank inspected yearly and pumped regularly by a licensed septic tank contractor.

Don'ts:

- Don't drive over your drain field or compact the soil in any way.
- Don't dig in your drain field or build anything over it, and don't cover it with a hard surface such as concrete or asphalt.
- Don't plant anything over or near the drain field except grass. Roots from nearby trees and shrubs may clog and damage the drain lines.
- Don't use your toilet as a trash can or poison your system and the groundwater by pouring harmful chemicals and cleansers down the drain. Harsh chemicals can kill the bacteria that help purify your wastewater.

For additional information on how septic systems work and how to properly plan a septic system, please visit the DHEC Environmental Health Onsite Wastewater page at the following link: http://www.scdhec.gov/environment/envhealth/Septic/

6.2.4 Wildlife and Domestic Animals

In any public place, feeding or providing food for wild animals including deer, wild ducks, geese, swans, and seagulls should be discouraged. By avoiding the feeding of wildlife, there will be reduced waste accumulating on impervious areas such as on roadsides, walkways, boats, docks and related structures thus helping to avoid these structures from becoming conveyors of fecal matter into the receiving waters due to run-off from precipitation or action of tides (US EPA, 2001).

Planting and maintaining a vegetative buffer around the residential areas will help filter pet waste that may accumulate in gardens and public walkways. Without any buffers or other BMPs, during rain events, the fecal matter may be washed off to the roadside stormwater

ditches. Installation of pet waste collection stations in residential neighborhoods along with dispensers of pet waste bags and bag holders for dog owners is recommended.

There are several other recommendations in Section 7 of this document along with suggestions for public outreach and education.

6.2.5 Marinas, Boating Activities and Structures

Boating related activities have the potential to contribute to fecal coliform contamination through potential discharges from the installed toilet (MSD) and gray water, and these discharges can contain bacteria. Improperly maintained or malfunctioning MSDs have the potential to leak or discharge untreated sewage (US EPA, January 2010). Therefore, it is important to bring the attention of the boating public to available pump-out facilities nearby. Another important factor is outreach and education for boat and dock owners regarding the proper use and maintenance of MSDs, and the impact of improper vessel discharges in Class SA waters. Local pump-out facilities can be found at http://www.dnr.sc.gov/marine/vessel/pdf/coastalArea1.pdf

Docks can be one of the sources as well as conveyors (as impervious surfaces) for potential bacteria contamination. Especially during the boating season, family pets can also be sources for contamination. Also fishing and shellfishing (such as crabbing) related waste can attract wildlife, especially birds, and waste from these types of activities may need to be contained and disposed of properly.

8.0

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Appendix A – Evaluating the Progress of MS4 Programs

Meeting the Goals of TMDLs and Attaining Water Quality Standards
Bureau of Water
August 2008

Described below are potential approaches that may be used by MS4 permit holders. These are recommendations and examples only, as SCDHEC-BOW recognizes that other approaches may be utilized or employed to meet compliance goals.

1. Calculate pollutant load reduction for each best management practice (BMP) deployed:
   - Retrofitting stormwater outlets
   - Creation of green space
   - LID activities (e.g., creation of porous pavements)
   - Creations of riparian buffers

- Streambank restoration
- Scoop the poop program (how many pounds of poop were scooped/collected)
- Street sweeping program (amount of materials collected etc.)
- Construction & post-construction site runoff controls

2. Description & documentation of programs directed towards reducing pollutant loading
   - Document tangible efforts made to reduce impacts of urban runoff
   - Track type and number of structural BMPs installed
   - Parking lot maintenance program for pollutant load reduction
   - Identification and elimination of illicit discharges
   - Zoning changes and ordinances designed to reduce pollutant loading
   - Modeling of activities & programs for reducing pollutant reductions
3. Description & documentation of social indicators, outreach, and education programs
   - Number/Type of training & education activities conducted and survey results
   - Activities conducted to increase awareness and knowledge – residents, business owners. What changes have been made based on these efforts? Any measured behavior or knowledge changes?
   - Participation in the stream and/or lake clean-up events or activities
   - Number of environmental action pledges
4. Water quality monitoring: A direct and effective way to evaluate the effectiveness of stormwater management plan activities.
   - Use of data collected from existing monitoring activities (e.g., SCDHEC data for ambient monitoring program available through STORET; water supply intake testing; voluntary watershed group's monitoring, etc)
   - Establish a monitoring program for permitted outfalls and/or waterbodies within MS4 areas as deemed necessary– use a certified lab
   - Monitoring should focus on water quality parameters and locations that would both link pollutant sources and BMPs being implemented
5. Links:
   - Evaluating the Effectiveness of Municipal Stormwater Programs. September 2007. EPA 833-F-07-010
   - The BMP database - http://www.bmpdatabase.org/BMPPerformance.htm (this link is specifically to the BMP performance page, and lot more)
   - EPA's STORET data warehouse - http://www.epa.gov/storet/dw_home.html

- EPA Region 5: STEPL – Spreadsheet tool for estimating pollutant loads http://it.tetratech-ffx.com/stepl/
- Measurable goals guidance for Phase II Small MS4 - http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm
- Environmental indicators for the stormwater program- http://cfpub.epa.gov/npdes/stormwater/measurablegoals/part5.cfm
- National menu of stormwater best management practices (BMPs) - http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm
- SCDHEC – BOW: 319 grant program has attempted to calculate the load reductions for the following BMPs:

  - Septic tank repair or replacement
  - Removing livestock from streams (cattle, horses, mules)
  - Livestock fencing
  - Waste Storage Facilities (a.k.a. stacking sheds)
  - Strip cropping
  - Prescribed grazing
  - Critical Area Planting
  - Runoff Management System
  - Waste Management System
  - Solids Separation Basin
  - Riparian Buffers

Appendix B – Shellfish Data Used for Calculation of the TMDL

Station	SF_Date	FCMPN	FCLog
15-20	1/9/2008	1.9	0.2787536
15-20	2/19/2008	49.0	1.69019608
15-20	3/10/2008	8.0	0.90308999
15-20	4/24/2008	23.0	1.36172784
15-20	5/14/2008	49.0	1.69019608
15-20	7/24/2008	26.0	1.41497335
15-20	8/6/2008	13.0	1.11394335
15-20	9/15/2008	1.9	0.2787536
15-20	10/21/2008	31.0	1.49136169
15-20	11/4/2008	13.0	1.11394335
15-20	12/8/2008	23.0	1.36172784
15-20	1/12/2009	5.0	0.69897
15-20	3/11/2009	11.0	1.04139269
15-20	4/16/2009	8.0	0.90308999
15-20	5/21/2009	17.0	1.23044892
15-20	6/2/2009	4.5	0.65321251
15-20	7/7/2009	1.9	0.2787536
15-20	8/5/2009	110.0	2.04139269
15-20	9/29/2009	49.0	1.69019608
15-20	10/21/2009	2.0	0.30103
15-20	11/2/2009	2.0	0.30103
15-20	1/5/2010	4.5	0.65321251
15-20	2/8/2010	14.0	1.14612804
15-20	3/23/2010	79.0	1.89762709
15-20	4/5/2010	140.0	2.14612804
15-20	5/25/2010	23.0	1.36172784
15-20	6/1/2010	6.8	0.83250891
15-20	7/21/2010	33.0	1.51851394
15-20	8/2/2010	3.7	0.56820172
15-20	9/21/2010	33.0	1.51851394
15-20	10/20/2010	130.0	2.11394335
15-20	11/16/2010	27.0	1.43136376
15-20	12/21/2010	2.0	0.30103

15-20	1/5/2011	2.0	0.30103
15-20	2/2/2011	7.8	0.8920946
15-20	3/22/2011	17.0	1.23044892
15-20	4/6/2011	4.5	0.65321251
15-20	5/25/2011	23.0	1.36172784
15-20	6/1/2011	1.8	0.25527251
15-20	7/19/2011	2.0	0.30103
15-20	8/2/2011	17.0	1.23044892
15-20	9/21/2011	130.0	2.11394335
15-20	10/25/2011	7.8	0.8920946
15-20	11/29/2011	33.0	1.51851394
15-20	12/8/2011	23.0	1.36172784
15-20	1/4/2012	4.5	0.65321251
15-20	2/1/2012	33.0	1.51851394
15-20	3/27/2012	2.0	0.30103
15-20	4/3/2012	7.8	0.8920946
15-20	7/23/2012	1.8	0.25527
15-20	8/28/2012	22.0	1.34242
15-20	9/19/2012	4.5	0.65321
15-20	10/24/2012	23.0	1.36173
15-20	11/28/2012	4.5	0.65321
15-20	12/13/2012	23.0	1.36173
15-20	1/8/2013	14.0	1.14613
15-20	2/5/2013	4.5	0.65321
15-20	3/26/2013	7.8	0.89209
15-20	4/2/2013	17.0	1.23045
15-20	6/12/2013	7.8	0.89209461
15-20	7/23/2013	6.8	0.83250892
15-20	8/6/2013	4.5	0.65321251
15-20	9/18/2013	7.8	0.89209461
15-20	10/22/2013	23.0	1.36172784
15-20	11/21/2013	7.8	0.89209461
15-20	12/5/2013	4.0	0.60205999
15-20	1/23/2014	1.7	0.23044892
15-20	2/4/2014	7.8	0.89209461
15-20	3/25/2014	49.0	1.69019608

15-20	4/3/2014	13.0	1.11394335
15-20	5/29/2014	4.5	0.65321251
15-20	6/3/2014	2.0	0.30103
15-20	7/22/2014	21.0	1.32221929
15-20	8/7/2014	2.0	0.30103
15-20	9/30/2014	4.5	0.65321251
15-20	10/23/2014	2.0	0.30103
15-20	12/17/2014	4.5	0.65321251
15-20	1/6/2015	4.5	0.65321251
15-20	2/3/2015	1.7	0.23044892
15-20	3/23/2015	49.0	1.69019608
15-20	4/6/2015	4.5	0.65321251
15-20	5/19/2015	4.5	0.65321251
15-20	6/1/2015	2.0	0.30103
15-20	7/22/2015	2.0	0.30103
15-20	8/4/2015	130.0	2.11394335
15-20	9/23/2015	14.0	1.14612804
15-20	10/21/2015	4.5	0.65321251
15-20	12/2/2015	13.0	1.11394335
15-20	1/5/2016	23.0	1.36172784
15-20	2/16/2016	22.0	1.34242268
15-20	3/22/2016	4.0	0.60205999
15-20	4/5/2016	23.0	1.36172784
15-20	5/31/2016	110.0	2.04139269
15-20	6/7/2016	350.0	2.54406804
15-20	7/26/2016	4.5	0.65321251
15-20	8/2/2016	2.0	0.30103
15-20	9/20/2016	17.0	1.23044892
15-20	11/16/2016	11.0	1.04139269
15-20	12/14/2016	7.8	0.89209461
15-20	1/11/2017	17.0	1.23044892
15-20	2/1/2017	7.8	0.89209461
15-20	4/4/2017	110.0	2.04139269
15-20	5/18/2017	27.0	1.43136376
15-20	6/6/2017	920.0	2.96378783
15-20	7/25/2017	6.8	0.83250892

15-20	8/1/2017	23.0	1.36172784
15-20	10/24/2017	23.0	1.36172784
15-20	11/28/2017	22.0	1.34242268
15-20	12/13/2017	11.0	1.04139269

March 2021 Municipal Report - Town of Hilton Head Island
Prepared for the Stormwater Utility Board
Reporting Period Ending on February 28, 2021

1. MS4 Update (EBER/SCHUMACHER)

MCM1 Public Education & Outreach	• Rain Garden webinar 2-04-21 • Protecting waterways webinar 2-09-21 • Presenting to WAPAC 2-25-2021 • Integrated Aquatic Plant Management 12-08-20
MCM2 Public Involvement & Participation	• Adopt a Salt-water Watershed Train the Trainer started certification process with DHEC. This will involve training volunteers who want to test surface water for water quality parameters. 2-22-2021
MCM3 Illicit Discharge Detection & Elimination	18 H2O quality monitoring sites tested & analyzed 1 Complaints received 0 Investigated with Code Enforcement 0 Resolved
MCM4 Construction Site SW Runoff Control	15 Plan reviews w/ corrections required 52 Plan reviews approved 10 Utility Permits 32 Active permitted construction sites 117 Inspections completed; Failed-0, P.Pass-16 1 Pre-Clear Inspection by Eber 4 C of C Inspections by Eber 0 Pre-Clear Inspections done by Schumacher 0 NOV issued
MCM5 Post-Construction SW Management	• 0 PCBMP inspections this month. • 5 PCBMP Completed for February • 27 PCBMP inspection by July 1 • Employed Cartegraph for PCBMP inspections.
MCM6 Pollution Prevention/Good Housekeeping	• Presentations to Town staff given via virtual Meetings, including a quiz. • Community Development completed 7/3 & 8/7 • Facilities Completed in September 2020

- **Water Quality Monitoring**: In an effort to supplement our 18 long term water quality monitoring locations, the Town recently purchased a YDI Water Quality meter. The meter will provide quick and reliable water quality data in various locations on the Island. The meter will collect basic water quality indicator data to assist us with determining if further investigation is warranted or not. Training on the meter will occur in the beginning of March with the goal of conducting field testing by the middle of March.
- **Street Sweeping**: The Town's MS4 Street Sweeping totals for February: 140 cubic yards.
- **Pond Management**: Seven Town-owned ponds are being treated and monitored for algae growth. The water temperature and the lack of rainfall are making it very challenging to remove all of the algae growth.

2. Service Requests (MARTIN)

A. February 2021 Service Request Activity:

- New requests: 21 69 (FY21 to date)
- Requests closed: 30 79 (FY21 to date)

B. Open Requests as of February 28, 2020:

- Open Qualifying: 281
  - Public (91)
  - Private* (190)
- Open Enforcement 9
  - IDDE (3)
  - Other (6)
- Open Referrals 39
  - County (16) (16)
  - SCDOT (22) (23)

** Located in residential POAs with current maintenance agreements*

C. Service Request Totals as of February 28, 2020:

- Open: 302 change in last 30 days: -14
- Closed: 1106 change in last 30 days: +35
- Total: 1408 change in last 30 days: +21

3. Major Capital Improvements Update (LADD)

A. Lawton (Sea Pines) SW Pump Station – Electrical System Rehabilitation

Reconstruction of the pump station facility is underway.

- Contract
  - Prime: BRW Construction (utilizing current on-call services contract)
  - Total construction cost: $1.6 million.
  - NTP on October 9, 2020
  - Estimated completion date: May 28, 2021 (8 Months).
- Permitting
  - Sea Pines ARB approved (9/2/20)
  - Town Minor DRP approved (9/30/20)
  - Town Demolition Permit approved (12/1/20)
  - Town Building Permit approved (01/13/21)
- Construction Status Update
  - Erosion and sediment control measures installed (11/16/20)
  - Pre-Clear Inspection passed (11/19/20)
  - Palmetto Electric disconnected electrical service to station in preparation for demolition work (12/1/20)
  - Demolition completed (12/15/20)
  - Utility relocations completed (1/29/2021)
  - Building construction underway (1/29/21)

4. Pump Station and Routine Maintenance Projects (LADD)

Refer to attached Routine Maintenance Schedule, Revised 3/1/2021

5. CIP and Maintenance Projects (UYESUGI)

Refer to attached SWU FY21 Projects Schedule, Revised 2/26/2021

6. Inventory & Modeling Program (NETZINGER)

A. Lower Jarvis Creek Study (FY19 Budgeted Watershed)
The Town is utilizing Woolpert to conduct a study of the Lower Jarvis Creek Watershed. The study involves collecting data for the existing stormwater system in the field, and identifying infrastructure deficiencies and flood hazards. The study area includes portions of William Hilton Parkway, Wild Horse Road, Gum Tree Road, Spanish Wells Road and Jonesville Road and within portions of the Indigo Run Community. The project is scheduled to be complete by September 2020. *Status meeting held on October 14.* ***Woolpert submitted final report in mid-February. The report includes evaluation of 10 improvement alternatives.***

B. South Forest Beach/Lawton Creek Study (FY20 Budgeted Watershed)
The Town will utilize an on-call consultant to study this watershed once we have the on-call contracts in place. ***We anticipate work beginning on this project in March of 2021.***

C. North Forest Beach/Shipyard/Wexford Study (FY21 Budgeted Watershed)
The Town will utilize an on-call consultant to study this watershed once we have the on-call contracts in place. ***We anticipate work beginning on this project in April of 2021***.

TOWN OF HILTON HEAD ISLAND
SWU ROUTINE MAINTENANCE

ROUTINE MAINTENANCE SCHEDULE

UPDATED: MARCH 1, 2021

MUNIS PROJECT CODE	NO.	WARD	SYSTEM	PROJECT LOCATION / LIMITS	SERVICE CONTRACT	ANNUAL BUDGET	ACTUAL (YTD)	ANNUAL SERVICE FREQUENCY	FY 2021													
									2020						2021							
									JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN		
XR001	1	1	AIRPORT OUTFALL CHANNEL	HHI AIRPORT TO DILLON RD	C11-2020 AQL	$ 1,945	$ -	1											X			
XR002	2	1	PALMETTO HEADLANDS	BEACH CITY RD TO HHI AIRPORT & CARDINAL RD & HUNTER RD	C11-2020 AQL	$ 16,368	$ 7,088	2	X									X				
XR003	3	1	SUMMIT / GATEWAY	ROADSIDE DITCHES, DILLON ROAD TO CUL-DE-SAC	C11-2020 AQL	$ -	$ -	TBD														
XR004	4	1	TABBY WALK	TABBY WALK APARTMENTS FROM MATHEWS DR TO NORTHRIDGE WETLAND	C11-2020 AQL	$ -	$ -	TBD														
XR005	5	1	NORTHRIDGE TRACT	CULVERTS AT PALMETTO PKY & US 278 BUSINESS	C10-2020 HHL	$ 849	$ -	1										X				
XR006	6	1	MID-ISLAND TRACT	US 278 BUSINESS TO UNION CEMETERY RD & UNION CEMETERY RD TO MARKET PLACE DR	C11-2020 AQL	$ 6,820	$ -	2				X							X			
XR007	7	1	MATHEWS SIDE STREETS	DRAINAGE AREA AT END OF POWER ALLEY	C11-2020 AQL	$ 1,379	$ -	1										X				
XR008	8	6	ISLANDERS BEACH PARK / SPARKLEBERRY DITCH	ISLANDER'S BEACH PARK	C11-2020 AQL	$ 1,754	$ 836	2		X									X			
XR009	9	6	FOLLY FIELD POA	STARFISH DR TO ISLAND CLUB SUBDIVISION	C11-2020 AQL	$ 2,117	$ -	1											X			
XR010	10	6	FOLLY FIELD BEACH PARK	FOLLY FIELD BEACH PARKING LOT & ENTRANCE	C11-2020 AQL	$ 705	$ -	1										X				
XR011	11	4	OTTER CREEK CHANNEL	US 278 BUSINESS TO LEG O'MUTTON RD	C10-2020 HHL	$ 24,250	$ 11,595	2		X									X			
XR012	12	1	OAKS/SEA TURTLE CHANNEL	SOUTHWOOD PARK DR TO INDIAN TR	C11-2020 AQL	$ 2,581	$ -	1										X				
XR013	13	1	OLD WOODLANDS CHANNEL	ACCESS OFF END OF INDIAN TR	C11-2020 AQL	$ 3,335	$ 1,425	2				X							X			
XR014	14	1	ASHMORE CHANNEL	US 278 BUSINESS TO MATHEWS DR	C11-2020 AQL	$ 4,123	$ -	2					X							X		
XR015	15	1	MATHEWS CHANNEL	ISLAND DR TO BROAD CREEK @ ASHMORE OUTFALL	C11-2020 AQL	$ 860	$ -	1											X			
XR016	16	1	MARSHLAND OUTFALL	15 MARSHLAND RD TO BROAD CREEK	C11-2020 AQL	$ 988	$ -	1										X				
XR017	17	4	VICTORIA SQUARE OUTFALL	VICTORIA SQUARE TO BROAD CREEK	C11-2020 AQL	$ 1,108	$ -	1										X				
XR018	18	1 & 4	NORTH MAIN STREET	WHOOPING CRANE TO HOSPITAL CENTER BLVD	C11-2020 AQL	$ -	$ -	TBD														
XR019	19	1	BERMUDA POINTE OUTFALL	SQUIRE POPE RD TO SKULL CREEK	C11-2020 AQL	$ 922	$ -	1											X			
XR020	20	1 & 2	GUMTREE CHANNEL	SQUIRES GATE RD TO WILD HORSE RD	C11-2020 AQL	$ 2,261	$ -	1												X		
XR021	21	1	CLIFFORD MILLER CHANNEL	GUMTREE RD TO POND AT FIRST TEE GOLF COURSE	C10-2020 HHL	$ 935	$ -	1										X				
XR022	22	1	CAROLINA ISLES SYSTEM	WEIR & OUTFALL, GUMTREE RD TO MARSHSIDE DR	C10-2020 HHL	$ 740	$ -	1										X				
XR023	23	1	WILBORN OUTFALL	MAIN ST TO JARVIS CREEK CHANNEL	C11-2020 AQL	$ -	$ -	TBD														
XR024	24	6	JARVIS CREEK CHANNEL NORTH	HILTON HEAD PLANTATION TO US 278 BUSINESS	C11-2020 AQL	$ 1,269	$ -	1												X		
XR025	25	4	JARVIS CREEK CHANNEL SOUTH	NATURES WAY TO CROSS ISLAND PKY	C11-2020 AQL	$ 3,848	$ -	1												X		
XR026	26	4	JARVIS CREEK PUMP STATION	US 278 BUSINESS TO NATURES WAY	C11-2020 AQL	$ 1,280	$ 640	2		X										X		
XR027	27	4	JARVIS CREEK PARK OUTFALL	LAKE AT JARVIS CREEK PARK	C10-2020 HHL	$ 2,024	$ -	1												X		
XR028	28	1	OAKVIEW CHANNEL	SPANISH WELLS RD TO OAKVIEW RD	C10-2020 HHL	$ 2,630	$ 1,670	2						X					X			
XR029	29	1 & 3	SAM FRAZIER CHANNEL	OAKVIEW RD TO JARVIS CREEK	C10-2020 HHL	$ 3,410	$ 2,570	2						X					X			
XR030	30	1	MUDDY CREEK CHANNEL NORTH	BRYANT RD TO MUDDY CREEK RD	C10-2020 HHL	$ 3,047	$ 2,275	2						X					X			
XR031	31	1 & 3	MUDDY CREEK CHANNEL SOUTH	54 MUDDY CREEK RD TO CROSS ISLAND PKY	C10-2020 HHL	$ -	$ -	TBD														
XR032	32	4	DIANAH DRIVE CHANNEL	2 DIANAH'S DRIVE & MARSHLAND ROAD	C10-2020 HHL	$ 1,820	$ 19,221	2	X										X			
XR033	33	1	BLAZING STAR LANE	POND AT END OF BLAZING STAR LANE	C11-2020 AQL	$ -	$ -	TBD														
XR034	34	1	ALEX PATTERSON ROAD	MARSHLAND ROAD TO CUL-DE-SAC	C11-2020 AQL	$ -	$ -	TBD														
XR035	35	3	YACHT COVE OUTFALL	YACHT COVE POA TO BROAD CREEK	C11-2020 AQL	$ 772	$ -	1												X		
XR036	36	3	WEXFORD PUMP STATION	54 YORKSHIRE DR (WEXFORD PLANTATION)	C11-2020 AQL	$ 1,386	$ 693	2				X								X		
XR037	37	3	HAIG POINT CHANNEL	PALMETTO BUSINESS PARK TO BROAD CREEK	C11-2020 AQL	$ 2,174	$ -	1												X		
XR038	38	3	ARROW ROAD CHANNEL	BIKE PATH FROM ARROW RD TO CROSSINGS PARK	C11-2020 AQL	$ 3,091	$ -	1												X		
XR039	39	3	WEXFORD CHANNEL	US 278 BUSINESS TO DUNNAGAN'S ALLEY	C11-2020 AQL	$ 1,025	$ -	1												X		
XR040	40	3	SHIPYARD PUMP STATION	CORDILLO DR (SHIPYARD PLANTATION)	C10-2020 HHL	$ 1,252	$ 626	2	X											X		
XR041	41	4	IBIS CHANNEL	HERON STREET & NORTH FOREST BEACH DRIVE	C11-2020 AQL	$ 1,084	$ 2,643	1									X					
XR042	42	5	FIRST BAPTIST CHANNEL	SOUTH FOREST BEACH DR TO CORDILLO PKWY	C11-2020 AQL	$ 2,643	$ -	1									X					
XR043	43	5	LAWTON CANAL PUMP STATION	GREENWOOD DR (SEA PINES PLANTATION)	C10-2020 HHL	$ -	$ -	TBD														
XR044	44	3	ARROW ROAD	ARCHER ROAD TO HELMSMAN WAY	C11-2020 AQL	$ 1,580	$ -	1											X			
XR045	45	3	DELANDER/GENESTA CHANNEL	TOWN PROPERTY BEHIND DELANDER COURT AND GENESTA STREET	C11-2020 AQL	$ 1,746	$ -	1									X					
XR046	46	1	PALMETTO BUSINESS PARK	PONDS AT PALMETTO BUSINESS PARK	C11-2020 AQL	$ -	$ -	TBD														
XR047	47	3	BOYS & GIRLS CLUB	BOYS & GIRLS CLUB & FIRST TEE OF THE LOWCOUNTRY	C11-2020 AQL	$ 1,468	$ -	1										X				
XR048	48	5	WOODWARD AVENUE	END OF WOODWARD AVENUE & ALDER LANE	C11-2020 AQL	$ 3,125	$ -	1									X					
						$ 114,708	$ 51,282	52	3	3		3	1	3		4	9	12	14			

COMPLETE X UNDERWAY X SCHEDULED X

PLANNED X ON HOLD X CANCELED X

Notes

XR006	Capacity & work shelf project is completed pending final invoice payment (Q3); Bi-annual routine maintenace begins in 2021
XR014	Work shelf project is completed pending final invoice payment (Q3); Bi-annual routine maintenace begins in 2021
XR032	Capacity and workshelf restoration project completed (Q1); bi-annual routine maintenance begins in 2021
XR042	Work shelf project is on hold pending permanent easement.
XR043	Routine Mainenance scope will begin once pump station reconstruction is complete in FY22.
XR046	Routine maintenace scope and budget requirements will be reassessed once pond control structure and outfall system functionality is restored. Date TBD

TOWN OF HILTON HEAD ISLAND

STORMWATER UTILITY - FY21 REPAIR AND MAINTENANCE PROJECT SCHEDULE

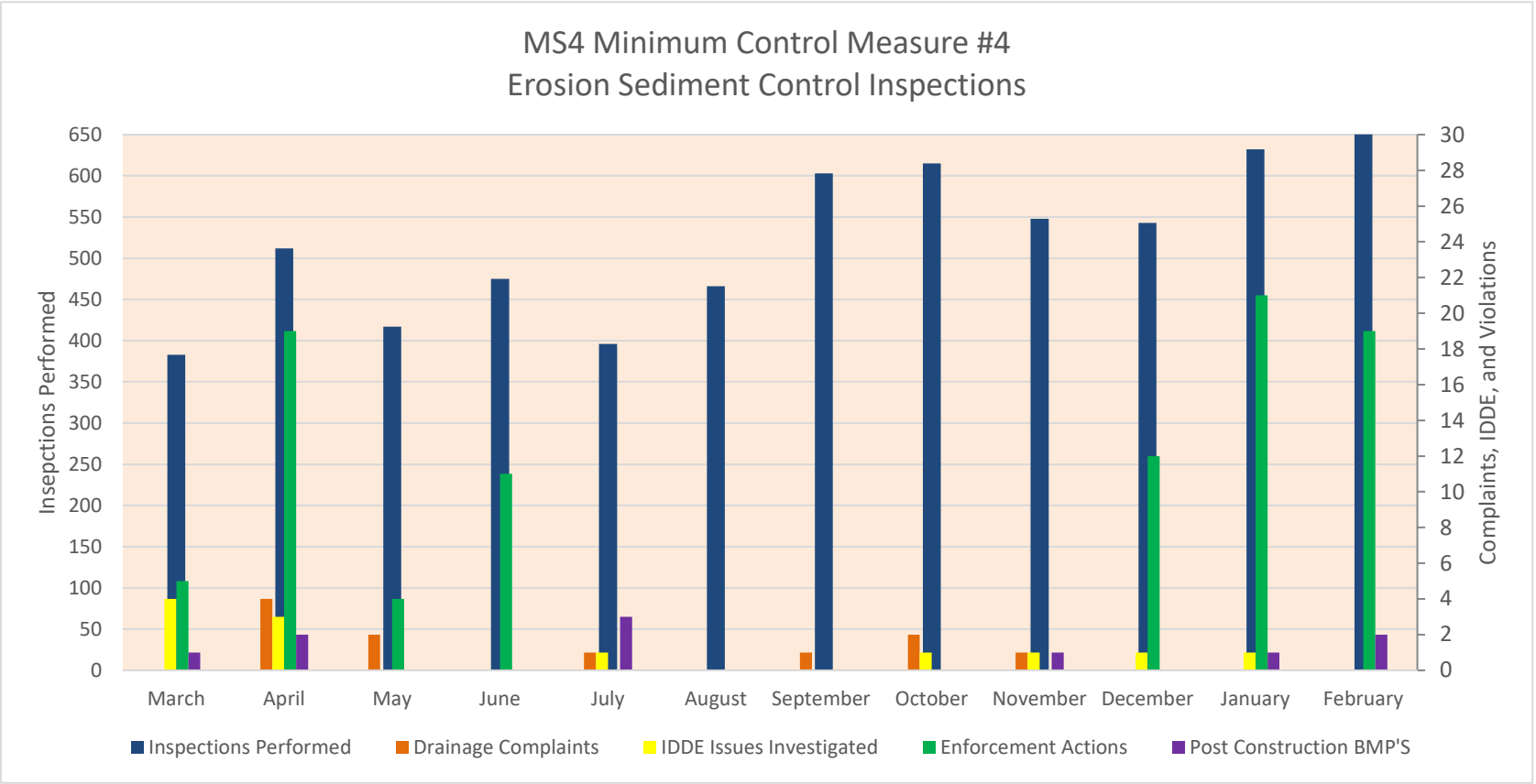
Revised February 26, 2021

Project Assignments	
Reimbursement	1
Jeff Netzinger	5
Kelli Uyesugi	46
Erik Ladd	12
	64

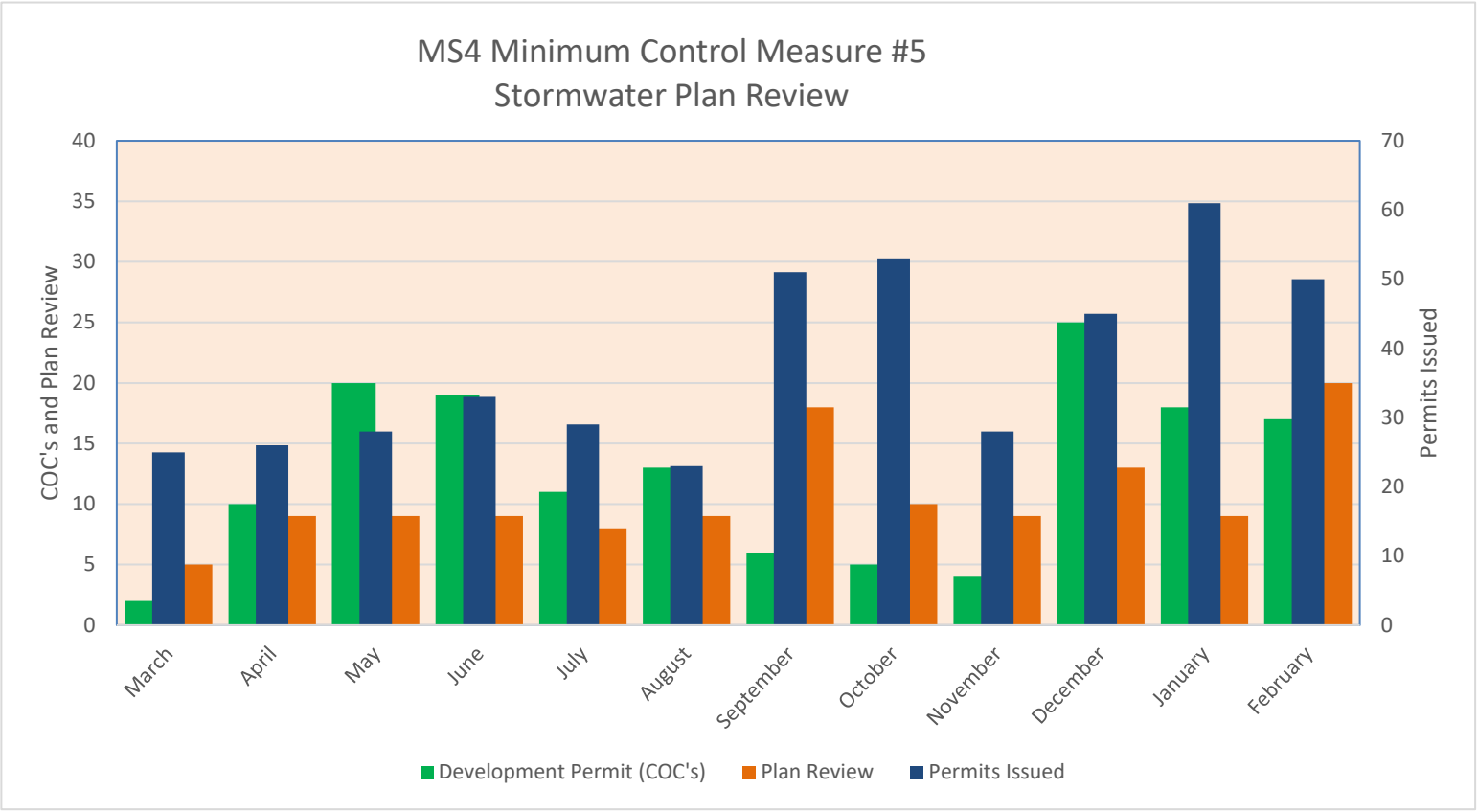
Service Totals		BUDGET	ACTUAL
Maintenance Agreements	83%	$ 3,492,629	$ 384,159
Public System	17%	$ 694,277	$ 12,915
Total		$ 4,186,906	$ 397,074

C COMPLETE
U UNDERWAY
P PLANNED

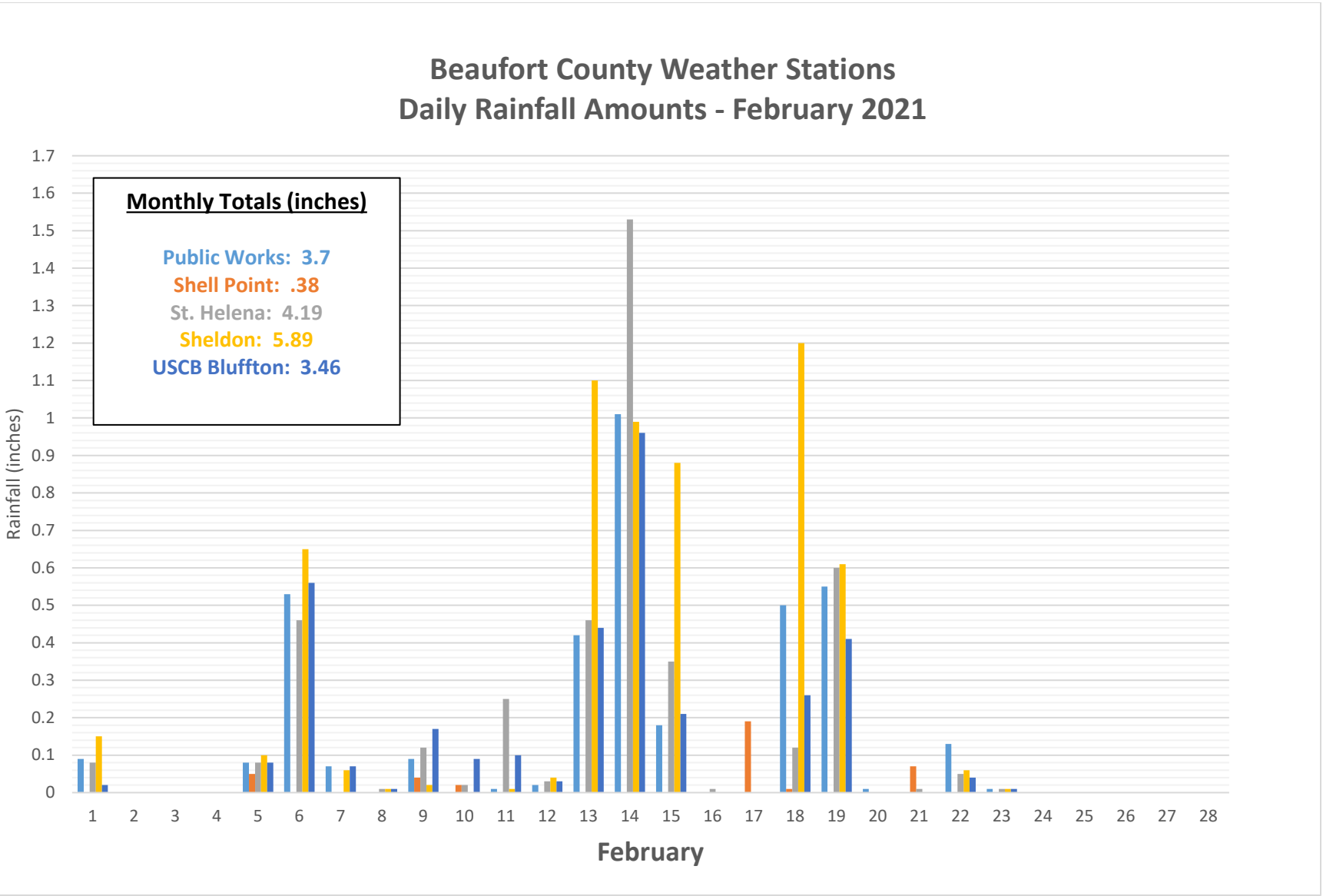
EVAL	SR #	PA	DESCRIPTION	Prog	BUDGET	ACTUAL	NOTES	Q1	Q2	Q3	Q4
INVENTORY & MODELING							(2)				
n/a	n/a	J	SOUTH FOREST BEACH/SEA PINES (SP041)	FY21B	$ 375,000		Thomas & Hutton			P	►
n/a	n/a	J	SHIPYARD / WEXFORD / NORTH FOREST BEACH	FY21B	$ 350,581		Woolpert			P	►
			TOTAL INVENTORY & MODELING		**$ 725,581**	**$ -**					
MAINTENANCE AGREEMENT CAPITAL PROJECTS											
SHIPYARD							(1)				
12	1523	K	GALLEON COURSE #8 TEE CULVERT REPLACEMENT (SH021)	FY21B	$ 25,000		internal design			C	
SEA PINES							(3)				
18	1403	E	SEA PINES PUMP STATION (SPP01)		$ 1,659,167				U	►	►
11	852	K	38 CANVAS BACK PIPE REPLACEMENT (SP034)	FY21B	$ 41,593	$ 39,200			C		
10	1089	K	MIZZENMAST/LIGHTHOUSE PIPE REPLACEMENT (SP043)	FY21B	$ 45,000					P	
WEXFORD							(1)				
12	1021	K	WEXFORD CLUB DRIVE FLOODING (WE007) CHANNEL MAINTENANCE	FY21B	$ 13,000	$ 35,859			C		
			TOTAL PUD CAPITAL PROJECTS		**$ 1,783,760**	**$ 75,059**					
PUBLIC CAPITAL PROJECTS											
TOWN SYSTEM							(3)				
7	1152	K	104 CORDILLO PKWAY (HEDGES) DRAINAGE (XN082)	FY21B	$ 45,000		internal design			P	
9	1352	K	400 William Hilton Parkway (The Oaks Pathway)	FY21B	$ 60,000		internal design				P
12	1499	J	Arrow Rd Pathway Crossing at Crossings Park Outfall	FY21B	$ 40,000		internal design				P
10	954	K	25 Moonshell Road (piping part of the Folly Field Ditch)	FY21C	$ 50,000						P
			TOTAL NON-PUD CAPITAL PROJECTS		**$ 195,000**	**$ -**					
MAINTENANCE AGREEMENT PROJECTS											
HILTON HEAD PLANTATION							(3)				
10	896	K	37 DEERFIELD RD DRAINAGE IMPROVEMENTS (HH039)	FY21B	$ 60,000	$ 59,531		C			
9	1227	R	Pine Island - Beach Renourishment	FY21B	$ 100,000		**reimbursement**				
12	1068	E	245 Seabrook Drive Weir Gate	FY21B	$ 15,000					P	
INDIGO RUN							(4)				
6	872	K	4 DRUMMOND LN CHANNEL CLEAN (IR013)	FY21B	$ 23,940	$ 15,183	◄ combined w/ SR 1238		C		
9	1238	K	29 PRIMROSE CHANNEL MAINT (IR019)	FY21B	$ 8,000				C		
6	1124	K	53 ABERDEEN CT SINKHOLE/POINT REPAIR (IR020)	FY21B	$ 4,000	$ 2,000			C		
14	1295	K	46 Sussex Lane (Indigo Run) Pipe Cleaning & Sumps	FY21B	$ 17,500					U	
LONG COVE							(1)				
6	1175	K	2 LONG BROW RD SINKHOLE / POINT REPAIR (LC007)	FY21B	$ 5,000	$ 1,500			C		
LEAMINGTON							(2)				
5	904	K	48 HEATH CT WEST POINT REPAIR / CLEAN (LM007)	FY21B	$ 5,000						P
6	1495	K	9 Niblick Court (Palmetto Dunes George Fazio GC 4th Fairway) CCTV	FY21B	$ 15,000						P
PALMETTO DUNES							(5)				
6	1242	K	FLOTILLA SINKHOLE REPAIR (PD027)	FY21B	$ 11,000						P
6	1241	K	DINGHY LN SINKHOLE REPAIR (PD028)	FY21B	$ 10,000						P
6	1244	K	1 LONG BOAT SINKHOLE REPAIR (PD029)	FY21B	$ 10,000						P
6	1243	K	2 HIGH RIGGER SINKHOLE REPAIR (PD030)	FY21B	$ 9,500						P
10	1313	K	29 Starboard Tack Pipe Replacement	FY21B	$ 9,000	$ 9,300		C			
PALMETTO HALL							(3)				
9	1231	K	25 LENOX TO 19 CLYDE LAGOON PIPE CLEANING (PH011)	FY21B	$ 44,848	$ 50,112			C		
7	1312	K	32 Madison Lane Inlet Replacement	FY21B	$ 1,000						P
11	1519	J	Palmetto Hall System Outfall at Fish Haul Rd	FY21B	$ 50,000		CONSULTANT DESIGN				P
PORT ROYAL							(7)				
6	1210	E	16 BARNACLE RD PIPE CLEAN / CHANNEL MAINT (PR029)	FY21B	$ 3,000						P
6	1211	E	16 COQUINA RD PIPE CLEAN / CHANNEL MAINT (PR030)	FY21B	$ 3,000						P
6	1212	E	16 DONAX RD PIPE CLEAN / CHANNEL MAINT (PR031)	FY21B	$ 3,000						P
8	1395	K	12 Scarborough Head (Ditch & Pipe Cleaning)	FY21B	$ 12,000					P	
8	1482	K	3 Wimbledon Ct (Grasslawn/S. Port Royal median) Pipe Replacement	FY21B	$ 15,000					P	
9	1496	K	61 S. Port Royal Drive Point Repair	FY21B	$ 2,500	$ 2,500		C			
9	1520	K	5 Resolute Place Channel Maintenance	FY21B	$ 15,000	$ 16,254		C			
SEA PINES							(13)				
11	1236	E	LAWTON PUMP STATION OUTFALL GATE REPAIR (SP038)	FY21B	$ 3,000						P
7	1335	K	16 Wagon Road Point Repair	FY21B	$ 10,000						P
7	1432	E	135 Lighthouse Road (Flap Gate)	FY21B	$ 9,000					P	
7	1492	K	3 Governors Road Point Repair	FY21B	$ 5,000						P
8	1423	K	13 Genoa Court (upstream Mizzenmast Ct system) Pipe Replacement	FY21B	$ 115,000					C	
9	1040	E	30 Governors Road- Near Clubhouse Entrance near Hole #10 Gate Repair	FY21B	$ 7,000		quote received				P
9	1289	K	226 Portside Drive (Lagoon Villas) Pipe Replacement/Ditch	FY21B	$ 29,000		permit received			P	
9	1398	E	20 Audubon Pond Drive Flap Gate Replacement	FY21B	$ 11,000		quote needed			P	
10	1399	E	1 Baynard Cove Road (Baynard Cove Outfall) Gate Cleaning & Repair	FY21B	$ 24,000		ON HOLD			P	
10	1463	K	18 Surf Scoter Road (Beach Pathway 26) Pipe Replacement	FY21B	$ 24,000					U	
11	1336	K	33 Battery Road CCTV & Pipe Replacement	FY21B	$ 28,000				U	►	
12	1400	K	35 Lawton Drive Channel Maintenance	FY21B	$ 7,000						P
14	1402	K	4 Snowy Egret Road (Beach Access Marker 25) Pipe Replacement	FY21B	$ 48,000	$ 42,407			C		
SHIPYARD							(4)				
13	1408	K	63 Shipyard Drive (Shipmaster) Channel Excavation	FY20C	$ 25,000	$ 92,413			C		
9	1412	K	45 Shipyard Drive Point Repair	FY21B	$ 5,000	$ 2,900			C		
13	1485	K	Intersection of Barcelona Drive and Shipyard Drive Pipe Replacement	FY21B	$ 5,000	$ 9,000				C	
14	1424	K	200 Colonnade Rd (Galleon 6 F'way) Sonesta Outfall System	FY21B	$ 21,000	$ 6,000				C	
11	1526	K	90 Gloucester Road (Harbourmaster) Pipe Cleaning & Channel Excavation	FY21C	$ 15,000						P
11	1534	K	48 Kingston Road (Pipe Cleaning and Lagoon Excavation)	FY21C	$ 12,000					C	
WEXFORD							(1)				
11	1525	K	PRIM CHL, RM WEXFORD POWERLINE RV PARK DITCH (WE008)	FY21B	$ 15,000				U	C	
			PUD MAINTENANCE CONTINGENCY (CP000)		**$ 73,000**						
			TOTAL PUD MAINTENANCE PROJECTS		**$ 943,288**	**$ 309,100**					
PUBLIC MAINTENANCE PROJECTS											
TOWN SYSTEM							(8)				
LADD			NON-PUD MAINTENANCE (XN000)	FY21B	$ 260,000		refer to RM program				
EBER			STREET SWEEPING (XN066)	FY21B	$ 98,000		ongoing weekly schedule				
11	827	J	54 SHAMROCK / COBIA CT DRAINAGE IMPRVMTS (XN081)	FY21B	$ 23,277		internal dgn/County to install			U	
7	1305	E	50 Dillon Road (WHP- Planters Row GC) Pathway Flooding	FY21B	$ 5,000		part of C11-2020-JO19		C		
7	1498	K	32 Office Park Road Inlet Repair	FY21B	$ 2,000						P
7	1455	K	316 Squire Pope Road Pipe Cleaning	FY21B	$ 2,000						P
9	1324	K	271 William Hilton Parkway (Island Tire) Workshelf/Channel Maintenance	FY21B	$ 66,000		deferred ► FY22				
9	1428	K	89 Squire Pope Road Pathway Flooding	FY21B	$ 15,000						P
10	1338	E	10 Bow Circle (Arrow Road Ditches) Channel Maintenance	FY21B	$ 35,000		on hold, int dgn rqd			P	
13	1522	K	59 Shelter Cove Lane (Veteran's Memorial Park) Dam Repair	FY21B	$ 18,000	$ 12,915			C		
			CONTINGENCY		**$ -**						
			TOTAL NON-PUD MAINTENANCE PROJECTS		**$ 524,277**	**$ 12,915**					
PUMP STATION MAINTENANCE PROJECTS							(1)				
LADD			SHIPYARD PUMP STATION (SHP00)	FY21B	$ 15,000		annual pump maint			P	
LADD			WEXFORD PUMP STATION (WEP00)	FY21B	$ 25,000		annual pump maint			P	
LADD			JARVIS PUMP STATION (XNP00 & XNP01)	FY21B	$ 15,000		annual pump maint			P	
			PUMP STATION CONTINGENCY (CGP00)		**$ 10,000**						
			TOTAL PUMP STATION MAINTENANCE PROJECTS		**$ 65,000**	**$ -**					



TYPE	March	April	May	June	July	August	September	October	November	December	January	February	Last 12 Months
Inspections Performed	383	512	417	475	396	466	603	615	548	543	632	724	6314
Drainage Complaints	0	4	2	0	1	0	1	2	1	0	0	0	11
IDDE Issues Investigated	4	3	0	0	1	0	0	1	1	1	1	0	7
Enforcement Actions	5	19	4	11	0	0	0	0	0	12	21	19	91
Post Construction BMP'S	1	2	-	-	3	-	-	-	1	0	1	2	9



TYPE	March	April	May	June	July	August	September	October	November	December	January	February	Last 12 Months
Development Permit (COC's)	2	10	20	19	11	13	6	5	4	25	18	17	150
Plan Review	5	9	9	9	8	9	18	10	9	13	9	20	128
Permits Issued	25	26	28	33	29	23	51	53	28	45	61	50	452


Beaufort County Weather Stations
Daily Rainfall Amounts - February 2021
Monthly Totals (inches)
Public Works: 3.7
Shell Point: .38
St. Helena: 4.19
Sheldon: 5.89
USCB Bluffton: 3.46
Rainfall (inches)
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
February

Lowcountry Stormwater Partners (LSP) Monthly Report
2/1/21 – 3/1/21

Completed Stormwater Outreach/Involvement Activities:

- LSP Changing Tides Newsletter
  - The Changing Tides is an informative publication for the general public. It includes a small article on a stormwater-related topic and information on past, current, and future events.
  - 2/26/20, online, 138, Find a copy here
- "Rain Gardens" webinar for the Lady's Island Garden Club
  - This 40-minute presentation covered rain garden function, design, and installation.
  - 2/4/21, online, 18
- "Protecting Beaufort County Waterways" webinar for the Women's Group on Hilton Head Plantation
  - This 30 minute-webinar covered the uniqueness of Beaufort's waterways, the importance of water quality to the Lowcountry way of life, and the basics of stormwater pollution and how to prevent it.
  - 2/9/21, online, 45
- LSP Consortium Meeting
  - 2/16/21, online, 16, Find the meeting minutes here
- "The Lowcountry Stormwater Partners" presentation to WAPAC
  - This presentation covered the mission, structure, successes, and future plans of the LSP.
  - 2/25/21, online, impact still being calculated.

Ongoing Stormwater Outreach/Involvement Activities:

- That's MY Truck Coloring Contest Planning
- Rain Barrel Sale
  - Found the appropriate contact information and reached out
- LSP Website Overhaul
  - The website is nearly done. All content has been delivered and reviewed.
- Mossy Oaks Rain Garden Workshop
  - The school district has approved the plans and I am coordinating to see how installation could be done in the spring.
- Septic System Resources
  - The septic system website written content has finished the review process and the website is under construction. It should be complete by the end of the month.
- Creation of an HOA Direct Mailing List
  - I began creating a list of mailing addresses for existing HOAs/PUDs to send pond training announcements and an invitation to join the Big News for Small Ponds listserv.
- Direct Contacts
  - During this time frame, I helped three (3) individuals who directly contacted me. Two clients needed help with rain barrels. Another needed help with a working around a wetland.
  - 4, phone call and email
- LSP Facebook page
  - The LSP Facebook page serves to engage and involve citizens in water-quantity and water-quality information. I also use the Facebook page to announce local, regional, and state-wide events.
  - 307 Likes, 115 People Reached with 4 posts made between 2/1/21 and 3/1/21

Planned Stormwater Outreach/Involvement Activities:

- Healthy Pond Series: Aquatic Plant Management
  - 3/04/21, online, flyer, registration
- Big News for Small Ponds
  - The "Big News for Small Ponds" mailing list is intended for both pond managers and owners in Beaufort, Jasper, Colleton, and Hampton Counties. By signing up for the mailing list, participants will receive emails or direct mailers about local, pond-related trainings, events, and certification opportunities.
  - 3/8/20, online
- Moss Creek Soil Sample Drive
  - 3/6/20
- LSP Changing Tides Newsletter
  - The Changing Tides is an informative publication for the general public. It includes a small article on a stormwater-related topic and information on past, current, and future events.
  - 3/14/20, online
- Keeping Ponds Healthy with Proactive Management
  - 3/31/20, online, flyer, registration
- Being a Neighbor for Clean Water Webinar Series
  - Every Tuesday and Thursday in April starting 4/6/21, online
- Coastal Flooding and Regulations Workshop (final title TBD)
  - Every Wednesday in June starting June 9th, online

Other Activities for Strategic Plan Compliance:

- Pet Waste Station Map
- Small grants program
- Septic system factsheet
- Septic system brochure
- Septic system "Welcome to the Neighborhood Packet"
- Septic media campaign
- Septic workshop
- 2021 Beaufort Area Stormwater Pond Conference
- Soil sample post cards and placards for retailers
- Soil sample bag distribution
- Pond Workshop
- Buffer workshop
- Promotional seed packet
- Native plant distributor list
- Native plant signage
- Construction Site Social Media Campaign
- Contractor trainings
- LID trainings
- LID Lunch-and-Learns
- BMP workshop for homeowners
- Rain barrel sale
- BMP survey

Completed Strategic Plan Items:

- Pond training listserv and direct mailer list
- Pet waste mass media campaign
- 2019 Beaufort Area Stormwater Pond Conference
- Master Pond Manager
- Pond mass media campaign
- Pond management website
- Soil sample trainings (satisfied by Cultivating a Carolina Yards workshops)
- Soil sample bags at festivals, nurseries, farmer's markets, and Master Gardener events
- Construction site trainings for contractors (satisfied by CEPSCI courses)
- LID factsheets
- LID training for design professionals (will be satisfied when DNR's Coastal Training Program reschedules to LID Manual Training)
- LID signs
- BMP workshops for homeowners (satisfied by Cultivating a Carolina Yards workshops, rain garden presentations, and Being a Neighbor for Clean Water Webinar Series)
- Master Rain Gardener
- Step-stake sign for rain gardens
- Rain Garden Rack Card
- Pond Rack Card
- Buffer Packets

MEMORANDUM

Date: March 10, 2021

To: Stormwater Management Utility Board

From: Matthew Rausch, Stormwater Infrastructure Superintendent

Re: **Maintenance Project Report**

This report will cover one major project and six minor projects. The Project Summary Reports are attached.

Major Project:

- **Buckwalter Parkway – Bluffton (SWUD 4):** This project improved 2,636 feet of drainage system. The scope of work included grubbing and clearing 41 feet of workshelf, bush hogging 2,139 feet of roadside ditch, cleaning out 2,595 feet of roadside ditch, repairing a sinkhole, installing rip rap and hand seeding for erosion control. The total cost was **$19,934.85.**

Minor or Routine Projects:

- **Lady's Island Bush Hog – Lady's Island (SWUD 7):** This project improved 29,486 feet of drainage system. The scope of work included bush hogging 27,303 feet of channel and 2,183 feet of roadside ditch. The total cost was **$19,837.48.**

- **St. Helena Island Vacuum Truck – St. Helena Island (SWUD 8):** This project improved 492 feet of drainage system. The scope of work included cleaning out 39 catch basins, jetting 11 crossline pipes, 16 driveway pipes, 302 feet of channel pipe and 190 feet of roadside pipe. The total cost was **$14,738.62.**

- **Roseida Road – Port Royal Island (SWUD 9):** This project improved 1,325 feet of drainage system. The scope of work included bush hogging 1,290 feet and cleaning out 1,325 feet of roadside ditch. The total cost was **$4,064.64.**

- **Chisholm Hill Road Channel #1 – Port Royal Island (SWUD 6):** This project improved 3,750 feet of drainage system. The scope of work included cleaning out 3,750 feet of channel. The total cost was **$3,912.98.**

- **Bluffton Bush Hog – Bluffton (SWUD 4):** This project improved 1,918 feet of drainage system. The scope of work included bush hogging 1,198 feet of channel. The total cost was **$3,646.15.**

- **Brickyard Point Road N – Lady's Island (SWUD 7):** This project improved 603 feet of drainage system. The scope of work included cleaning out 603 feet of channel. The total cost was **$1,980.68.**

Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Buckwalter Parkway

Activity: Routine/Preventive Maintenance

Duration: 09/21/20-11/25/20

Narrative Description of Project:

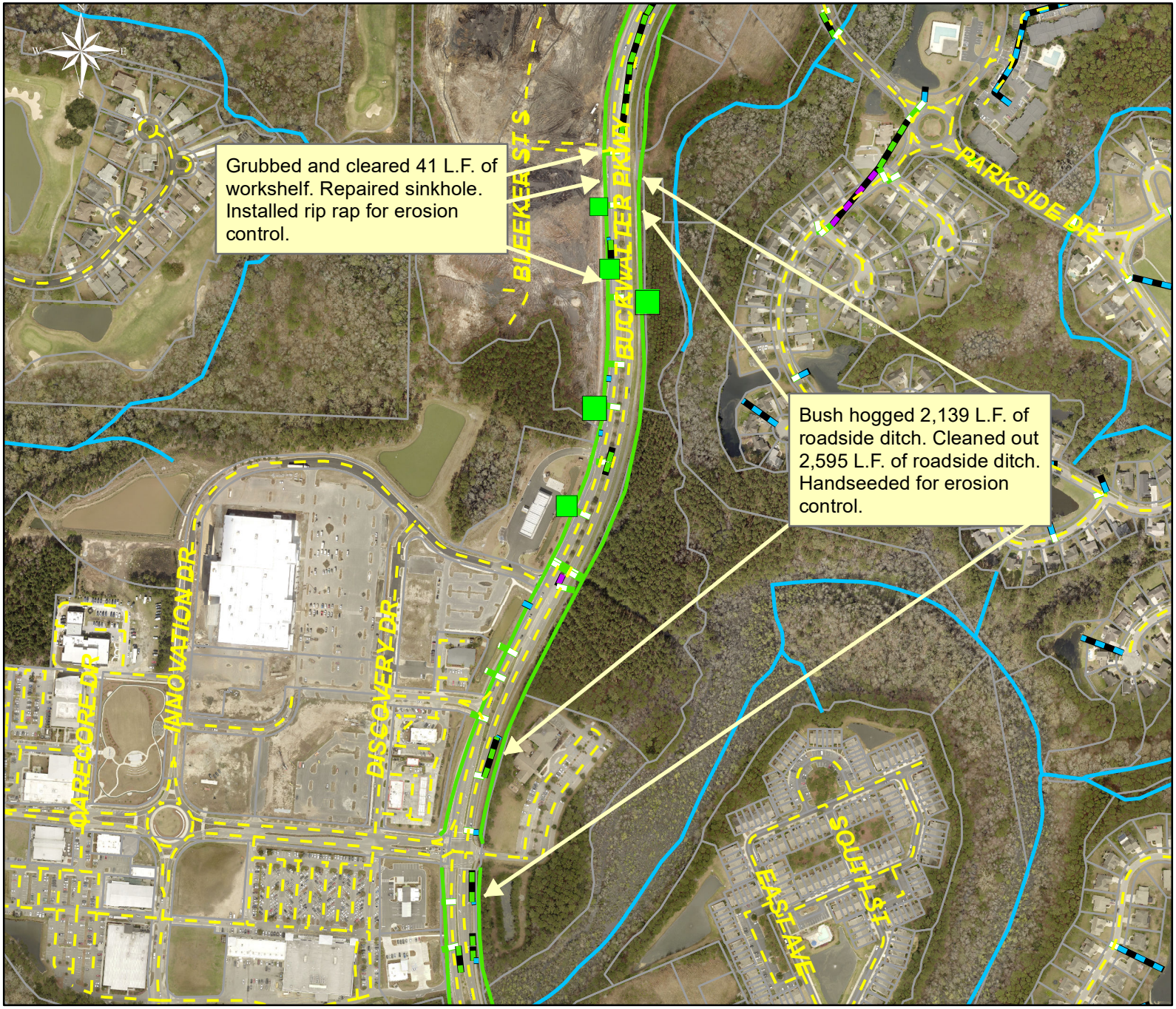
Project improved 2,636 L.F. of drainage system. Grubbed and cleared 41 L.F. of workshelf. Bush hogged 2,139 L.F. of roadside ditch. Cleaned out 2,595 L.F. of roadside ditch. Repaired sinkhole. Installed rip rap and handseeded for erosion control.

2021-507 / Buckwalter Parkway	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	2.0	$43.58	$0.00	$0.00	$0.00	$0.00	$43.58
CBH / Channel- bushhogged	48.0	$1,011.27	$468.96	$72.00	$0.00	$639.12	$2,191.35
HAND / HANDSEEDED	32.0	$689.16	$139.23	$121.54	$0.00	$158.76	$1,108.69
HAUL / Hauling	97.0	$2,203.42	$1,911.14	$1,241.76	$0.00	$807.52	$6,163.84
PP / Project Preparation	18.0	$383.46	$26.10	$15.60	$0.00	$152.64	$577.80
RSDCL / Roadside Ditch - Cleanout	211.0	$4,665.87	$1,008.64	$245.58	$0.00	$1,409.40	$7,329.49
SG / Shoot Grade	28.0	$608.88	$51.72	$31.20	$0.00	$158.76	$850.56
SR / Sinkhole repair	12.0	$249.36	$17.40	$17.60	$0.00	$52.92	$337.28
UTLOC / Utility locates	2.0	$49.40	$0.00	$0.00	$0.00	$26.46	$75.86
WSGRB / Workshelf - Grubbed	40.0	$837.36	$156.63	$50.72	$0.00	$211.68	$1,256.39
2021-507 / Buckwalter Parkway Project Sub Total	490.0	$10,741.76	$3,779.82	$1,796.01	$0.00	$3,617.26	$19,934.85
Grand Total	**490.0**	**$10,741.76**	**$3,779.82**	**$1,796.01**	**$0.00**	**$3,617.26**	**$19,934.85**

(Before)

(During)

(After)



Project: Buckwalter Parkway

Activity: Routine/ Preventive Maintenance

Project #: 2021-507

Township/SW Dist: Bluffton/4

Completed: November 2020

Legend

Drainage Type

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

0 115 230 460 690 920 Feet

1 inch = 500 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/11/21
File:C:\project summaries map/Buckwalter Parkway_2021-507

Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Lady's Island Bush Hog

Activity: Routine/Preventive Maintenance
Duration: 08/04/20-10/21/20

Narrative Description of Project:
First Rotation: 08/04/20-10/21/20 Project improved 29,486 L.F. of drainage system. Bush hogged 27,303 L.F. of channel and 2,183 L.F. of roadside ditch. This project consisted of the following areas: Beauty Berry Lane (3,579 L.F.), Eustis Landing Road (1,013 L.F.), Airport Circle (2,228 L.F.), Alumni Road (2,125 L.F.), Faculty Drive (975 L.F.), Little Capers Road (1,514 L.F.), Gumwood Drive (262 L.F.), Sheppard Road (680 L.F.), Holly Hall Road (678 L.F.), Thomas Sumpter Street (1,460 L.F.), Schwartz Road (2,408 L.F.), Wade Hampton Drive (1,194 L.F.), Jasper Lane (620 L.F.), Marion Fripp Lane (528 L.F.), Sams Point Road (1,941 L.F.), Braeburn Lane (1,773 L.F.), Christine Drive (214 L.F.), Shallowford Down (46 L.F.), Honeysuckle Lane (750 L.F.), Token Lane (1,336 L.F.), Brickyard Point Road N (700 L.F.), Plesant Point Drive (1,750 L.F.), Johnson Landing Road (250 L.F.), Deveaux Road (1,066 L.F.)

2021-302 / Ladys Island Bush Hog	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	1.5	$32.69	$0.00	$0.00	$0.00	$0.00	$32.69
CBH / Channel- bushhogged	358.0	$7,991.57	$5,196.77	$594.56	$0.00	$5,145.60	$18,928.50
HAUL / Hauling	16.0	$353.16	$354.24	$76.80	$0.00	$92.10	$876.30
2021-302 / Ladys Island Bush Hog Project Sub Total	375.5	$8,377.41	$5,551.01	$671.36	$0.00	$5,237.70	$19,837.48
Grand Total	**375.5**	**$8,377.41**	**$5,551.01**	**$671.36**	**$0.00**	**$5,237.70**	**$19,837.48**

Before

During

After

Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: St. Helena Island Vacuum Truck -

Scott Hill Road, No Man Land Road, Tombee Road, Luther Warren Drive, Hunters Grove Road, Chisholm Road, Levant Byas Road, Shed Road, Jenkins Port Road, Mary Jenkins Circle, Lands End Road, Bay Point Road, Capers Island Road, Mattis Drive

Activity: Routine/Preventive Maintenance
Duration: 08/05/20-12/16/20

Narrative Description of Project:

Project improved 508 L.F. of drainage system. Cleaned out (39) catch basins. Jetted (11) crossline pipes, (16) driveway pipes, 302 L.F. of channel pipe and 190 L.F. of roadside pipe.

2021-309 / St Helena Island Vacuum Truck	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	2.0	$43.58	$0.00	$0.00	$0.00	$0.00	$43.58
CBCO / Catch basin - clean out	224.0	$5,090.33	$2,970.36	$716.46	$0.00	$1,129.59	$9,906.74
CBIN / Catch basin - inspected	16.0	$356.48	$34.80	$16.80	$0.00	$229.44	$637.52
CLPJT / Crossline Pipe - Jetted	14.0	$310.81	$268.24	$52.66	$0.00	$164.13	$795.84
DPJT / Driveway Pipe - Jetted	50.0	$1,127.07	$992.32	$180.02	$0.00	$527.11	$2,826.52
SD / Soft Digging	10.0	$220.95	$191.60	$33.52	$0.00	$82.35	$528.42
2021-309 / St Helena Island Vacuum Truck Project Sub Total	316.0	$7,149.22	$4457.32	$999.46	$0.00	$2132.62	$14,738.62
Grand Total	**316.0**	**$7,149.22**	**$4457.32**	**$999.46**	**$0.00**	**$2132.62**	**$14,738.62**

(No Picture Available)

Project: St. Helena Island Vacuum Truck - Scott Hill Road Map #1

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

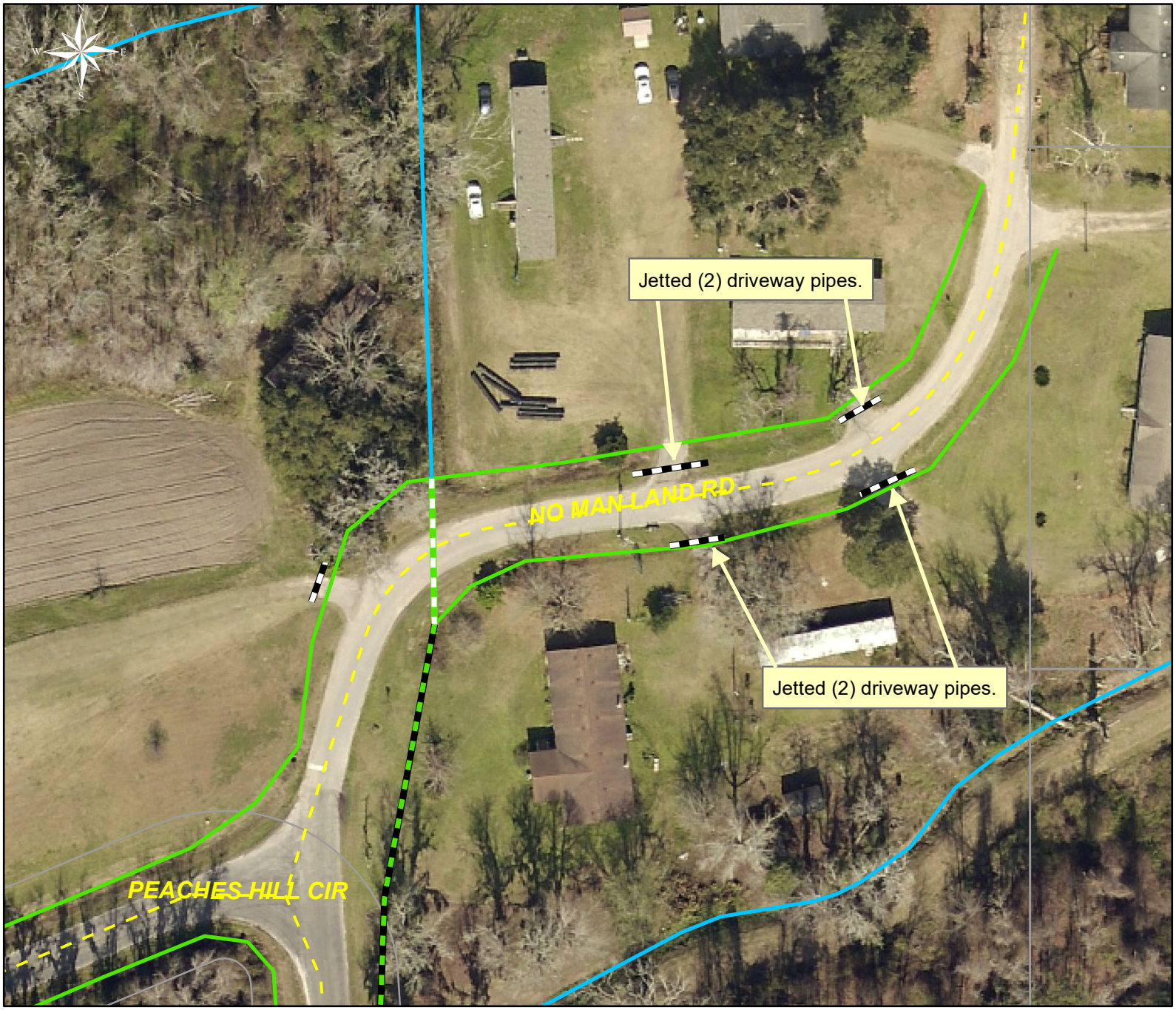
Drainage Type

- 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:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- Scott Hill Road Map #1_2021-309



Project: St. Helena Island Vacuum Truck - No Man Land Road Map #2

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

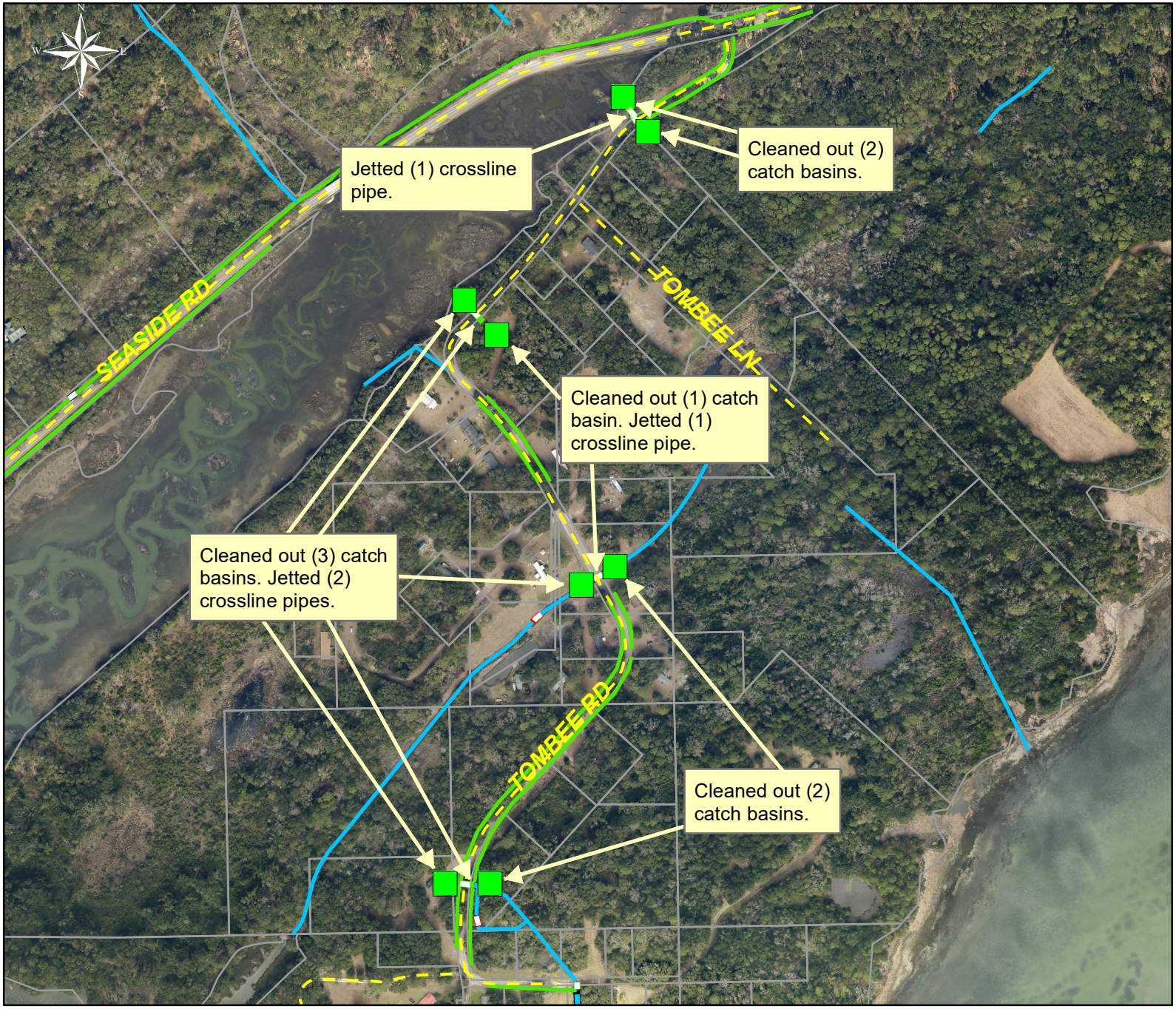
Drainage Type

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

0 15 30 60 90 120 Feet

1 inch = 63 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- No Man Land Road Map #2_2021-309



Project: St. Helena Island Vacuum Truck - Tombee Road Map #3

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

Drainage Type

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

0 100 200 400 600 800 Feet

1 inch = 420 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- Tombee Road #3_2021-309

Project: St. Helena Island Vacuum Truck - Luther Warren Drive Map #4

Activity: Routine/ Preventive Maintenance

Project #: 2021-309A

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

Drainage Type

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

0 50 100 200 300 400 Feet

1 inch = 210 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- Luther Warren Drive Map #4_2021-309

Project: St. Helena Island Vacuum Truck - Hunters Grove Road Map #5

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

Drainage Type

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

0 50 100 200 300 400 Feet

1 inch = 210 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- Hunters Grove Road Map #5_2021-309

Project: St. Helena Island Vacuum Truck - Chishlom Road Map #6

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

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 25 50 100 150 200 Feet

1 inch = 100 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- Chisholm Road Map #6_2021-309

Project: St. Helena Island Vacuum Truck - Levant Byas Road Map #7

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

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 55 110 220 330 440 Feet

1 inch = 230 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- Levant Byas Road Map #7_2021-309

Project: St. Helena Island Vacuum Truck - Shed Road Map #8

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

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:01/10/21
File:C:\project summaries map/SHI Vacuum Truck- Shed Road Map #8_2021-309

Project: St. Helena Island Vacuum Truck - Jenkins Port Road Map #9

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

Drainage Type

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

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/19/21
File:C:\project summaries map/SHI Vacuum Truck- Jenkins Port Road Map #9_2021-309

Project: St. Helena Island Vacuum Truck - Mary Jenkins Circle Map #10

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

Drainage Type

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

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/19/21
File:C:\project summaries map/SHI Vacuum Truck- Mary Jenkins Circle Map #10_2021-309

Project: St. Helena Island Vacuum Truck - Bay Point Road and Lands End Road Map #11

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

Drainage Type

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

0 20 40 80 120 160 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/20/21
File:C:\project summaries map/SHI Vacuum Truck- Bay Point Rd and Lands End Rd Map #11_2021-309

Project: St. Helena Island Vacuum Truck - Capers Island Road Map #12

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

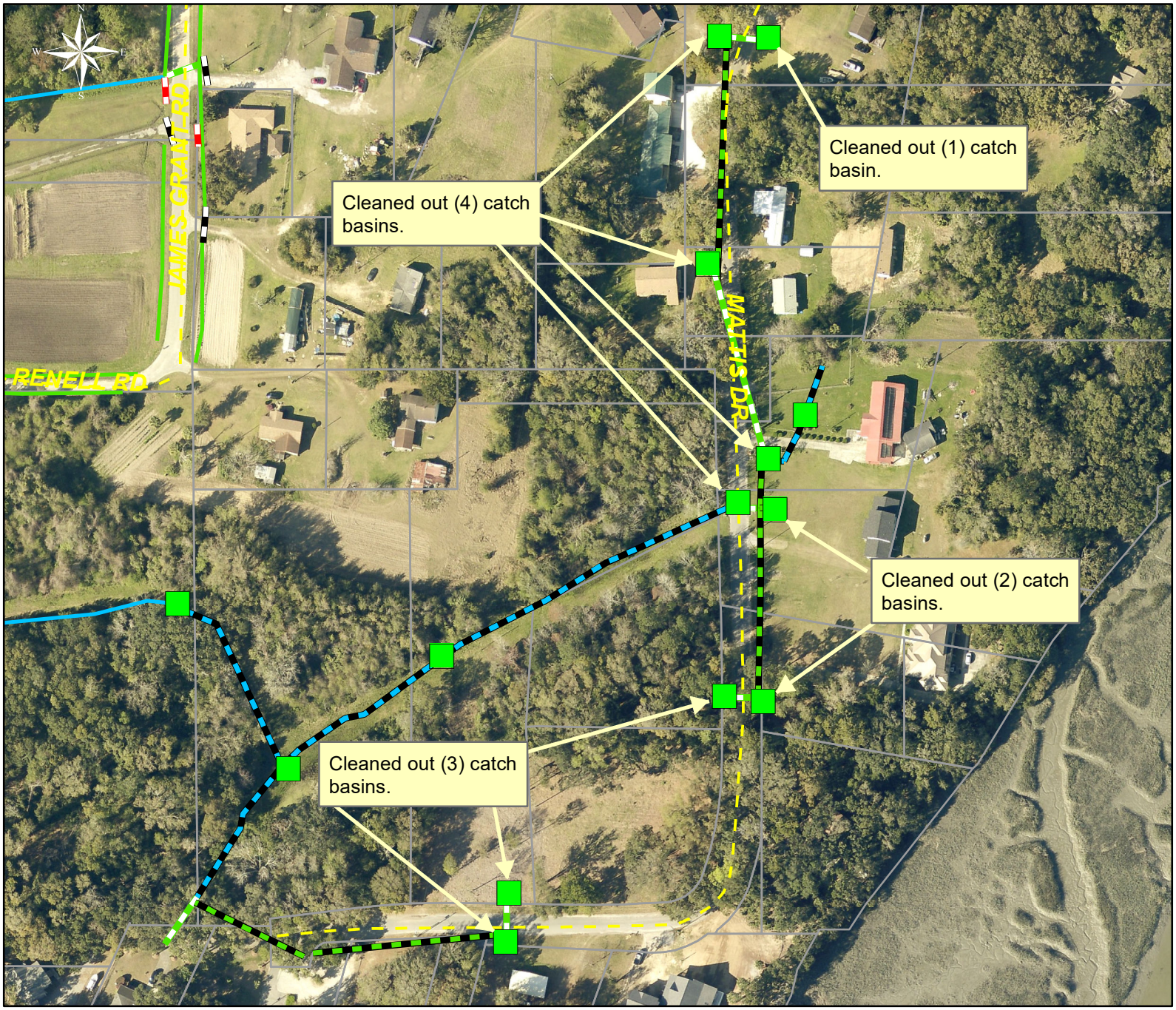
Drainage Type

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

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/20/21
File:C:\project summaries map/SHI Vacuum Truck- Capers Island Road Map #12_2021-309



Project: St. Helena Island Vacuum Truck - Mattis Drive Map #13

Activity: Routine/ Preventive Maintenance

Project #: 2021-309

Township/SW Dist: St. Helena Island/8

Completed: December 2020

Legend

Drainage Type

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

0 40 80 160 240 320 Feet

1 inch = 170 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/19/21
File:C:\project summaries map/SHI Vacuum Truck- Mattis Drive #13_2021-309

Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Roseida Road

Activity: Routine/Preventive Maintenance
Duration: 12/14/20-12/17/20

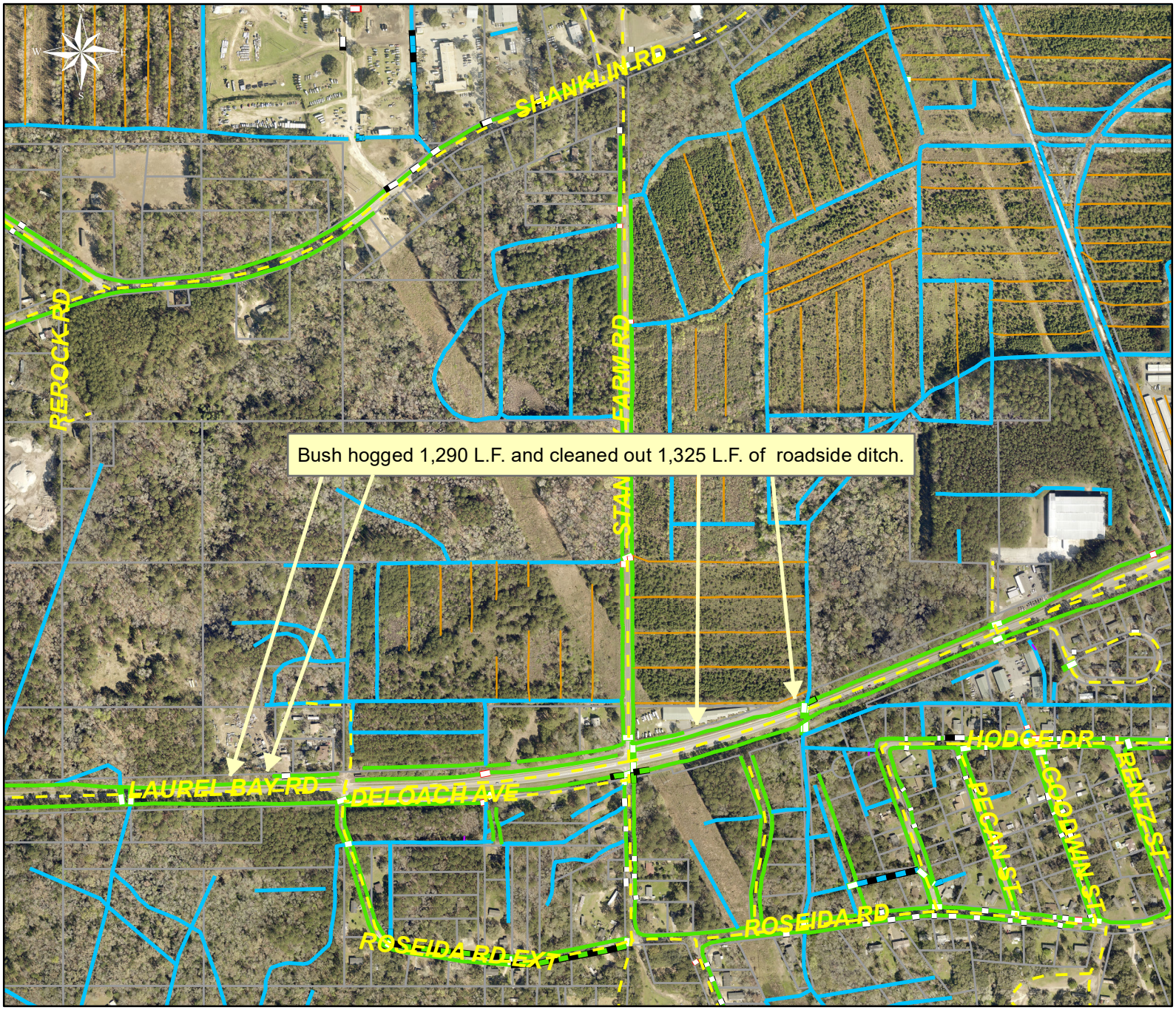
Narrative Description of Project:
Project improved 1,325 L.F. of drainage system. Bush hogged 1,290 L.F. and cleaned out 1,325 L.F. of roadside ditch.

2021-521 / Roseida Road	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	1.0	$21.79	$0.00	$0.00	$0.00	$0.00	$21.79
HAUL / Hauling	24.0	$522.96	$457.44	$33.77	$0.00	$0.00	$1,014.17
RDBH / Roadside ditch - bushhogged	16.0	$337.09	$121.85	$30.24	$0.00	$213.04	$702.22
RSDCL / Roadside Ditch - Cleanout	70.0	$1,506.56	$413.68	$62.24	$0.00	$343.98	$2,326.46
2021-521 / Roseida Road Project Sub Total	111.0	$2,388.40	$992.97	$126.25	$0.00	$557.02	$4,064.64
Grand Total	**111.0**	**$2,388.40**	**$992.97**	**$126.25**	**$0.00**	**$557.02**	**$4,064.64**

(Before)

(During)

(Ending)



Project: Roseida Road

Activity: Routine/ Preventive Maintenance

Project #: 2021-521

Township/SW Dist: Port Royal Island/9

Completed: December 2020

Legend

Drainage Type

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

0 160 320 640 960 1,280 Feet

1 inch = 670 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/20/21
File:C:\project summaries map/Roseida Road_2021-521

Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Chisholm Hill Road Channel #1

Activity: Routine/Preventive Maintenance
Duration: 12/14/20-12/17/20

Narrative Description of Project:
Project improved 3,750 L.F. of drainage system. Cleaned out 3,750 L.F. of channel.

2021-524 / Chisholm Hill Road Channel #1	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	1.0	$21.79	$0.00	$0.00	$0.00	$0.00	$21.79
CCO / Channel - cleaned out	64.0	$1,336.56	$402.12	$76.72	$0.00	$504.72	$2,320.12
HAUL / Hauling	33.0	$702.11	$433.66	$102.00	$0.00	$333.30	$1,571.07
2021-524 / Chisholm Hill Road Channel #1 Project Sub Total	98.0	$2,060.46	$835.78	$178.72	$0.00	$838.02	$3,912.98
Grand Total	**98.0**	**$2,060.46**	**$835.78**	**$178.72**	**$0.00**	**$838.02**	**$3,912.98**

(Before)

(During)

(After)

Project: Chisholm Hill Road Channel #1

Activity: Routine/ Preventive Maintenance

Project #: 2021-524

Township/SW Dist: Port Royal Island/6

Completed: December 2020

Legend

Drainage Type

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

0 80 160 320 480 640 Feet

1 inch = 330 feet

Prepared By: BC Stormwater Management Utility
Date Print:01/19/21
File:C:\project summaries map/Chisholm Hill Road Channel #1_2021-524

Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Bluffton Bush Hog

Activity: Routine/Preventive Maintenance

Duration: 11/04/20-11/09/2020

Narrative Description of Project:

First Rotation on 11/04/20-11/09/2020: Project improved 1,918 L.F. of drainage system. Bush hogged 1,198 L.F. of channel. This project consisted of the following areas: Hawkes Road (1,918 L.F.)

2021-304 / Bluffton Bush Hog	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	1.0	$21.79	$0.00	$0.00	$0.00	$0.00	$21.79
CBH / Channel- bushhogged	72.0	$1,596.90	$883.38	$118.80	$0.00	$1,025.28	$3,624.36
2021-304 / Bluffton Bush Hog Project Sub Total	73.0	$1,618.69	$883.38	$118.80	$0.00	$1,025.28	$3,646.15
Grand Total	**73.0**	**$1,618.69**	**$883.38**	**$118.80**	**$0.00**	**$1,025.28**	**$3,646.15**

Before

During

After

Beaufort County Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Brickyard Point Road N

Activity: Routine/Preventive Maintenance

Duration: 12/02/20-12/07/20

Narrative Description of Project:

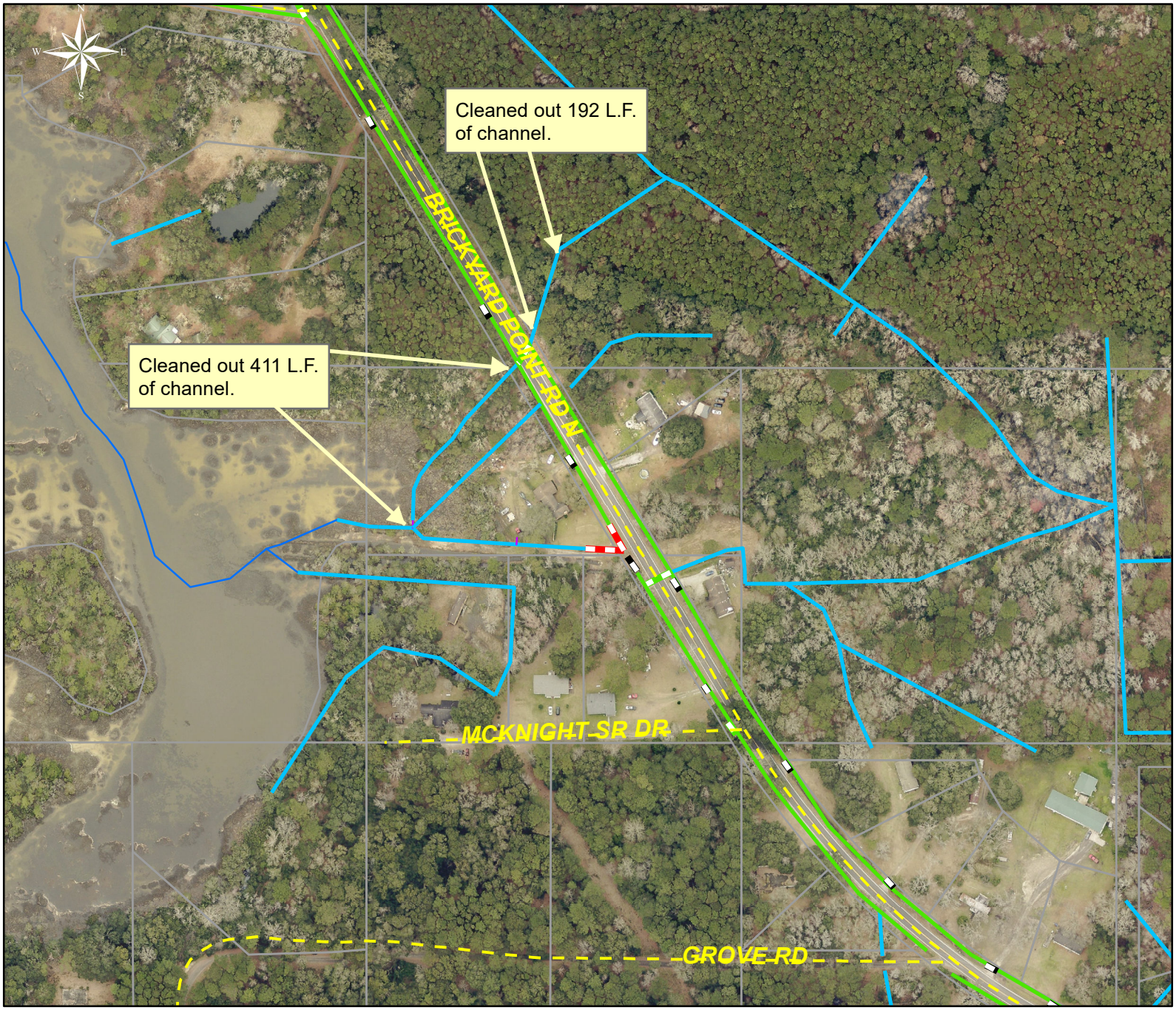
Project improved 603 L.F. of drainage system. Cleaned out 603 L.F. of channel.

2021-517 / Brickyard Point Road N	**Labor Hours**	**Labor Cost**	**Equipment Cost**	**Material Cost**	**Contractor Cost**	**Indirect Labor**	**Total Cost**
AUDIT / Audit Project	1.0	$21.79	$0.00	$0.00	$0.00	$0.00	$21.79
CCO / Channel - cleaned out	36.0	$752.52	$177.60	$73.28	$0.00	$305.28	$1,308.68
HAUL / Hauling	11.0	$244.97	$209.66	$36.96	$0.00	$158.62	$650.21
2021-517 / Brickyard Point Road N Project Sub Total	48.0	$1,019.28	$387.26	$110.24	$0.00	$463.90	$1,980.68
Grand Total	**48.0**	**$1,019.28**	**$387.26**	**$110.24**	**$0.00**	**$463.90**	**$1,980.68**

(Before)

(During)

(Ending)



Project: Brickyard Point Road N

Activity: Routine/ Preventive Maintenance

Project #: 2021-517

Township/SW Dist: Lady's Island/7

Completed: December 2020

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:01/19/21
File:C:\project summaries map/Brickyard Point Road N_2021-517

Beaufort County Stormwater Utility
Proposed Budget for FY2022

Unaudited Projected Revenue

	FY2021 Budget	FY2022 Proposed Budget
Revenue		
Admin SWU Fees	903,126	1,443,602
Unincorp/CWI SWU Fees	6,100,193	5,453,632
Total Revenue from SWU Fees	7,003,319	6,897,234
Interest	112,500	101,250
Other	11,175	20,975
Reserve Utilization		
Capital Improvement Fund	2,794,262	3,573,828
Projected Revenue Total	9,921,256	10,593,287

C/S of Management Budget (382,080), montioring ($170K) & PE/O ($90K)
COB - $38,564
ToB - $52,658
ToHHI - $141,496
ToPR - $24,364
Unincorp BC $384,998
Additional Unincorp BC $801,522

CWI Fees - $776,503

Interest on County investments allocated to SW

SW Permits & Fines

Personnel
SW Manager; Business Mngr; GIS/MS4 Data Mngr; Admin Tech - .5 FTE;Asst SW Mngr - .2 FTE
$100K Professional Services for litigation of delinquent SW fees (not included in the portion of the admin budget that is cost-shared with the municipalities.)

Efforts (Expenses)

	FY2021	FY2022
Administration	575,550	482,080
Utility Activities		
UA/Annual Maintenance	4,782,884	4,713,726
UA/Drainage Enhancement	10,000	20,000
UA/Additional Studies	-	20,000
Utility Activities Subtotal	4,792,884	4,753,726
Regulation		
UA/Control Reg	872,789	1,169,937
UA/WQ Monitoring	120,000	170,000
UA/Public Information/Outreach	95,000	90,000
Regulation Subtotal	1,087,789	1,429,937
Capital Improvement Fund		
Brewer Memorial Demo Pond	600,000	13,000
Factory Creek Phase I	327	-
Factory Creek Phase II	20,550	-
Salt Creek South	248,496	1,099,639
Shanklin Road	341,820	1,604,995
Mossy Oaks	205,000	-
Camp St. Mary	342,000	-
Evergreen	840,000	1,650
Graves/Pepper Hall	500,000	750,000
Rock Springs Creek	43,052	-
Lucy Creek (Tuxedo Park)		87,659
Capital Improvement Fund Subtotal	3,141,245	3,556,943
Utility Operating Fund		
Capital Assets	323,788	370,600
Efforts Total	9,921,256	10,593,287

Personnel
Superintendent; Admin Superintendent; (2) Foremen; (39) crew & support; Asst SW Mngr - .4 FTE
Professional Services
$227K - Huspah Creek
$15K - Survey
$15K - Engineering Services
$5K - Wetland delineation
Non-Professional Services
$350K -Tree Removal (Lake Linden, Royal Pines, & Palmetto Ridge), Bluffton Flyover construction, and contingency
Other
$188K - Interest on bond
$50K - Legal services for easements & land acquisition

Contingency

Contingency

Personnel
(4) Inspectors (SW Plan Reviewer/Inspector- not funded in FY22); (2) Infrastruc Inspec Tech; Admin Tech- .5 FTE; Asst SW Mngr - .4 FTE
Professional Services
$500K - MS4 Consultant

$170K - USCB Lab

$90K - Carolina Clear

Closeout process

ROW acquisition and construction

ROW acquisition and construction

Removed from CIP list

Finalize grant requirements

County share for design & constructuion per the JDA

Removed from CIP list

Bathymetry & Permitting

Regulatory
$33.6K - SUV for Asst SW Mngr
$100K - WQ Monitoring (Insitu) Equip
Infrastructure
$121K - Lowboy Tractor
$88K - Lowboy Trailer
$28K - Flatbed Trailer

BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD
AGENDA Wednesday, June 9th , 2021
2:00 p.m.
County Council Chamber, 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 – March 10th, 2021 (backup)

2. INTRODUCTIONS

3. PUBLIC COMMENT

4. REPORTS
   A. Utility Update – Katie Herrera (backup)
   B. Monitoring Update – Katie Herrera (backup)
   C. Stormwater Implementation Committee Report – Katie Herrera (backup)
   D. Stormwater Related Projects – Katie Herrera (backup)
   E. Upcoming Professional Contracts Report – Katie Herrera (backup)
   F. Regional Coordination – Katie Herrera (backup)
   G. Municipal Reports – Katie Herrera (backup)
   H. MS4 Update – Katie Herrera (backup)
   I. Maintenance Projects Report – Matthew Rausch (backup)
   J. Liaison Report - Ms. Alice Howard

5. UNFINISHED BUSINESS

6. NEW BUSINESS

7. PUBLIC COMMENT

8. NEXT MEETING AGENDA

   A. September 9th, 2021

9. ADJOURNMENT