



BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD AGENDA

Wednesday, October 21, 2015

2:00 p.m.

Beaufort Industrial Village, Building 3 Conference Room 104 Industrial
Village Road, Beaufort
843.255.2805

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

1. CALL TO ORDER – 2:00 p.m.
 - A. Approval of Agenda
 - B. Approval of Minutes – September 30, 2015 ([backup](#))
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
 - A. Utility Update – Eric Larson, P.E. ([backup](#))
 - B. MS4 Update - Eric Larson, P.E. ([backup](#))
 - C. Monitoring Update – Eric Larson, P.E. ([backup](#))
 - D. Stormwater Implementation Committee Report – Eric Larson, P.E. ([backup](#))
 - E. Stormwater Related Projects – Eric Larson, P.E. ([backup](#))
 - F. Upcoming Professional Contracts Report – Eric Larson, P.E. ([backup](#))
 - G. Regional Coordination – Eric Larson, P.E. ([backup](#))
 - H. Financial Report – Not provided
 - I. Maintenance Projects Report – Eddie Bellamy ([backup](#))
5. UNFINISHED BUSINESS
 - A. Approval of Draft 2016 Stormwater Management Utility Board Meeting Schedule ([backup](#))
6. NEW BUSINESS
 - A. Overview of MS4 Implementation of Permit Year 1 (PY1)- Eric Larson ([backup](#))
7. PUBLIC COMMENT
8. EXECUTIVE SESSION
 - A. Discussion of Negotiations Incident to Proposed Contractual Arrangements and Proposed Purchase of Factory Creek Watershed Site
9. NEXT MEETING AGENDA
 - A. November 18, 2015 ([backup](#))
10. ADJOURNMENT



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

September 30, 2015 at 2:00 p.m. in Beaufort Industrial Village Building #3 Conference Room
Draft 10/09/15

Board Members

Present

Don Smith
William Bruggeman
Marc Feinberg
Larry Meisner
Patrick Mitchell
James Fargher

Absent

Allyn Schneider

Ex-Officio Members

Present

Andy Kinghorn
Jeremy Ritchie

Absent

Van Willis
Scott Liggett

Beaufort County Staff

Eric Larson
Kevin Pitts
Patricia Wilson

Visitors

Robbie O'Quinn, SCDNR
John Hutchinson, Town of Bluffton
Reed Armstrong, Coastal Conservation League
April Turner, SC Sea Grant
Alice Howard, County Council
Bryan McIlwee, Town of Hilton Head Island
Denise Sanger SCDNR

1. Meeting called to order – Don Smith

- A. Agenda – The Agenda was approved. Mr. Don Smith later moved Item 6A before Item 4A.
- B. August 26, 2015 Minutes - Approved.

2. Introductions – Completed.

3. Public Comment(s) – None.

4. Reports – (Mr. Eric Larson provided a written report which is included in the posted agenda and can be accessed at <http://www.bcgov.net/departments/Administrative/beaufort-county-council/boards-and-commissions/council-appointed/board-list/stormwater-management-utility-board/agendas/2015/093015.pdf>)

A. Utility Update – Eric Larson

Rate Structure Ordinance and Rate Increase – Mr. Eric Larson updated his written report based on County Council passing the Rate Structure Ordinance and Rate Increase on September 28, 2015. Utility staff and consultants are in the process of incorporating the new rates into the 2015 Beaufort County tax run.

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

MS4 Permit Application –Mr. Larson stated that the DHEC Public Notice was issued August 31, 2015 and the effective date of the permit will be October 1, 2015. No comments have been received as of September 28, 2015.

MS4 Staffing – Mr. Larson said that a recommendation has been made for the MS4 Coordinator Position.

Beaufort County Pond Conference – Mr. Larson reported that the Pond Conference is set for October 22, 2015 at USCB Gateway campus in Bluffton. More information can be found at <http://www.neighborsforcleanwater.org/>, bcgov.net or Facebook. Mr. Larson encouraged all board members to attend the pond conference. A motion was made for the Stormwater Management Utility to pay for board members' registration fee and was passed unanimously.

Natural Resources Defense Council (NRDC) – Mr. Larson noted that the NRDC sued the EPA in 2003 demanding that the EPA strengthen their Phase II Stormwater Rules (MS4 Program) and won. NRDC has stated that since 2003 nothing has been done, therefore the NRDC renewed their objection in 2014 and courts again ruled in their favor. Now the EPA has until November 17, 2016 to publish new rules. DHEC will have to make changes which will affect the utility in about two or three years when the current permit is renewed.

Clean Water Rule – Waters of the United States have been redefined by the Army Corps of Engineers and US EPA on August 28, 2015. Broadening the definition could negatively affect compliance with NPDES permits and the MS4 program. Redefinition changes could limit the County's ability to modify or maintain manmade ditches and ponds. The Southeastern Stormwater Association (SESWA) and the County sent comments to the EPA on possible negative outcomes of the broadened definition. Federal courts in North Dakota granted an injunction to prevent that rule from going into effect. Attorney Generals representing 27 states have filed a lawsuit challenging the rule asking to be part of the injunction.

C. Monitoring Update – Eric Larson

Mr. Larson had nothing to report.

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

Mr. Larson had nothing to report.

E. Stormwater Related Projects – Eric Larson

Okatie West / SC 170 Widening Retrofit Land Purchase – Mr. Larson updated his written report by stating recent actions by County Council make it possible to continue with the contract process.

Huspah Court South Ditch Easement / Mike Zara – Mr. Larson updated his written report by stating that discussions are ongoing with the property owner.

F. Professional Contracts Report – Eric Larson

Stormwater Management Plan (Master Plan) Update – Applied Technology and Management, Inc. (ATM) is still working on a scope of work, cost of service, and contract. SWIC will be meeting October 8, 2015 to review the scope of services.

G. Regional Coordination - Eric Larson

Buckingham Plantation Drive Innovation District Conceptual Design Study – This project was in jeopardy due to possible budget cuts. Mr. Larson is continuing to move forward on this project as a result of the rate increase.

Factory Creek Watershed Regional Detention Basin & Academy Park Subdivision Proposal – Staff is discussing a potential Public – Private Partnership with the developer to construct a regional facility on this site. This would involve revising the current concept as defined by the 2006 Stormwater Management Plan. Mr. Larson will provide updates as available.

H. Financial Report –

The report was not provided this month.

I. Maintenance Projects Report –

The report was not provided this month.

5. Unfinished Business –

A. Update on Rate Study – Eric Larson

Option E of the rate study was approved by County Council as proposed. As part of Option E, the creation of a Countywide Infrastructure (CWI) fee was approved and will be charged to each parcel within a municipality. Stormwater staff has until the county deadline of October 16, 2015 to update the tax system. A Public Education Campaign will provide flyers, website and contact information to address questions regarding the fee change. Passing of the rate increase paves the way to move forward with the 5 year plan, propose an expanded extent of service plan, execute capital project plans which align with the updated management plan, and emphasize MS4 implementation, which includes hiring additional staff.

6. New Business – (All studies presented below were provided in advance and can be accessed at the previously mentioned posted agenda.)

A. Presentation of the D.N.R. Volume Sensitivity (Salinity) Study- Dr. Denise Sanger ([backup](#))

Dr. Denise Sanger with the Department of Natural Resources (DNR) presented the findings of a Volume Sensitivity Study. She summed up the study with the following:

- **Sensitivity within system is correlated to (but not necessarily caused by)**
 - Greater % Imperviousness
 - Greater proportion of % freshwater wetlands
 - Less proportion of % estuarine wetlands
 - Smaller creek width
 - **Sensitivity across systems is correlated to (but not necessarily caused by)**
 - Greater proportion of freshwater wetlands
 - Larger size
 - Greater proportion of poorly draining soils
 - Less % estuarine wetlands
- Watersheds west and north of Port Royal Sound are more likely to contain sensitive headwaters than to the east; however, all are sensitive in their headwaters.
 - Runoff modeling can be used to understand potential changes within a watershed.

B. Presentation of the May River Watershed Sewer Master Plan – John Hutchinson, TOB

Mr. John Hutchinson with the Town of Bluffton presented the May River Watershed Sewer Master Plan completed in cooperation with Beaufort Jasper Water Sewer Authority (BJWSA). Mr. Hutchinson demonstrated how the concentrated number of septic systems negatively impacts the water quality of the May River Watershed, which the May River Action Plan is trying to prevent. This study focused on vacuum sewer systems, low pressure sewer systems, gravity sewer systems and the costs involved with implementing these systems in the desired locations. Mr. Hutchinson responded to questions about funding for the sewer systems by stating that this study focuses on the cost to implement rather than the funding for the sewer systems. Mr. Jeremy Ritchie replied to other funding questions by stating that some of the funding is provided from the Town’s Stormwater Fees. Mr. Eric Larson questioned funding sources outside of the Town of Bluffton and Mr. Hutchinson replied that the county could work with BJWSA for funding options. Mr. Andy Kinghorn expressed his understanding that BJWSA will not ask existing rate payers to pay for expansion of services. Mr. William Bruggeman asked how to justify using Stormwater fees to paying for Point Source

Pollution. Mr. Ritchie responded that septic systems eventually cause water quality impairment. The fee allocation was set up before he joined the Town of Bluffton.

C. Draft 2016 Stormwater Management Utility Board Meeting Schedule – Eric Larson

The proposed schedule was included in the posted agenda for board members to review and discuss at the next board meeting.

7. Public Comment(s) – None

9. Next Meeting Agenda- Approved and can be viewed on the posted agenda.

10. Meeting Adjourned.

Beaufort County Volume Sensitive Waters Study

Beaufort County Stormwater Utility Board

September 30, 2015



Beaufort County

- Water quality impairments in the County
- Strong stormwater standards with requirement to meet volume limits, also controls pollutants
- NPDES Phase II MS4 Permitting
- Stormwater Management Plan being revised
- The county is faced with managing stormwater to maintain the health of the waterways in the face of coastal growth.

Objectives

1. Delineate the **spatial extent** (within) of stormwater impact on major tidal waters.
2. Identify **which watersheds** (across) are more volume sensitive.
3. **Project impacts** on volume control.

Load = Volume * Concentration



Methods

- Five study creeks
- Install rain gauges in each watershed
- Measure salinity and depth down-stream from headwaters
- Evaluate magnitude of salinity change as function of rainfall
- Identify location of “critical volume-sensitive waters” - within and across
- Model stormwater runoff to assess BMPs and changing rainfall patterns



May River



Watershed Advisory Committee Members

- Don Smith
- Andy Kinghorn
- Eric Larson
- Danny Polk
- Kim Jones
- Al Segars
- Al Stokes
- Russell Berry
- Alan Warren
- Chris Marsh
- Reed Armstrong
- Dan Ahern
- Bob Gross

Precipitation Impact on Estuarine Waters

Within Watersheds

Across Watersheds

Volume Impacts
(contaminants)

Impacts on
Organisms

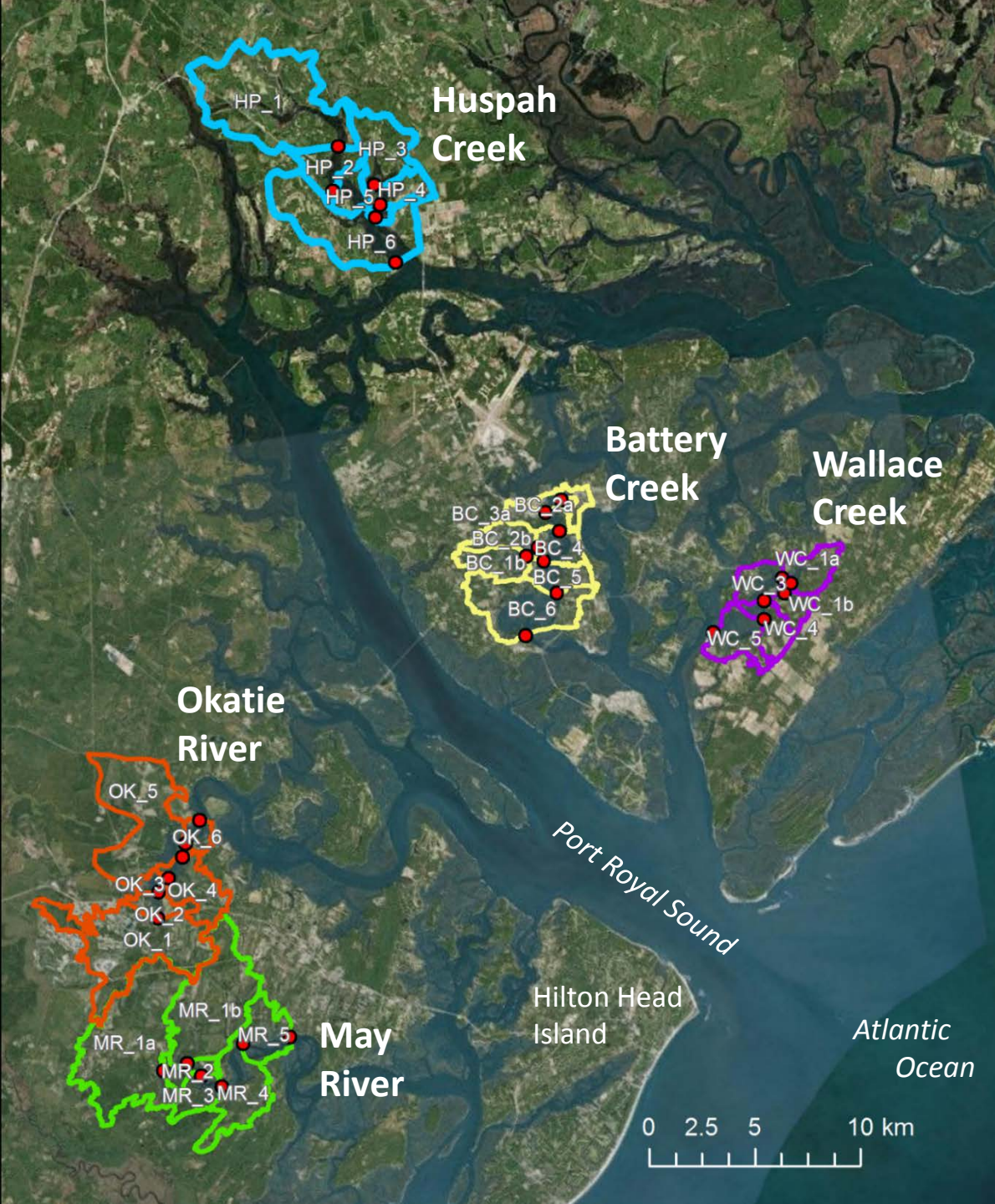
Data

Collection

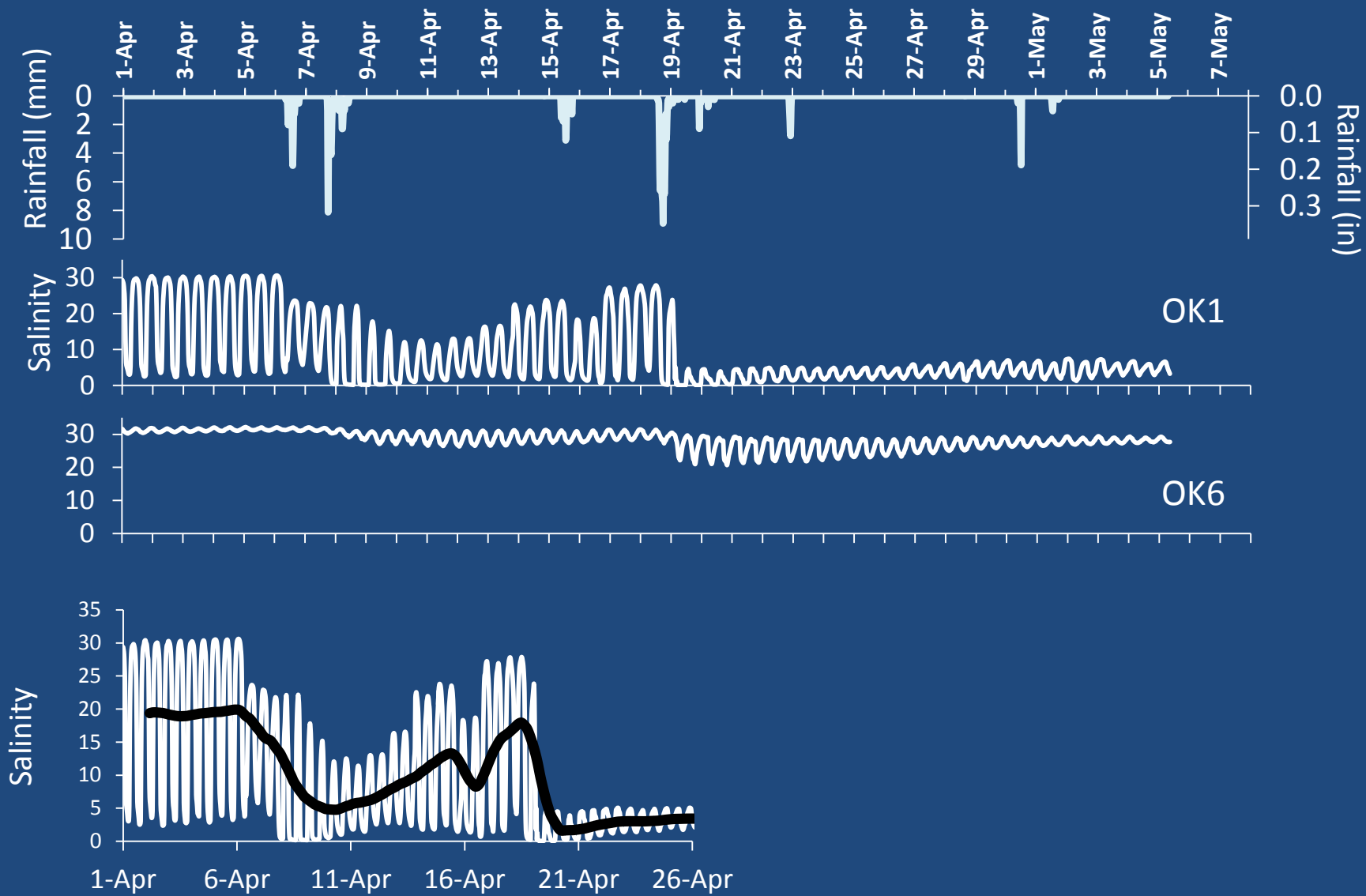
Salinity Drop

Predictive
Models

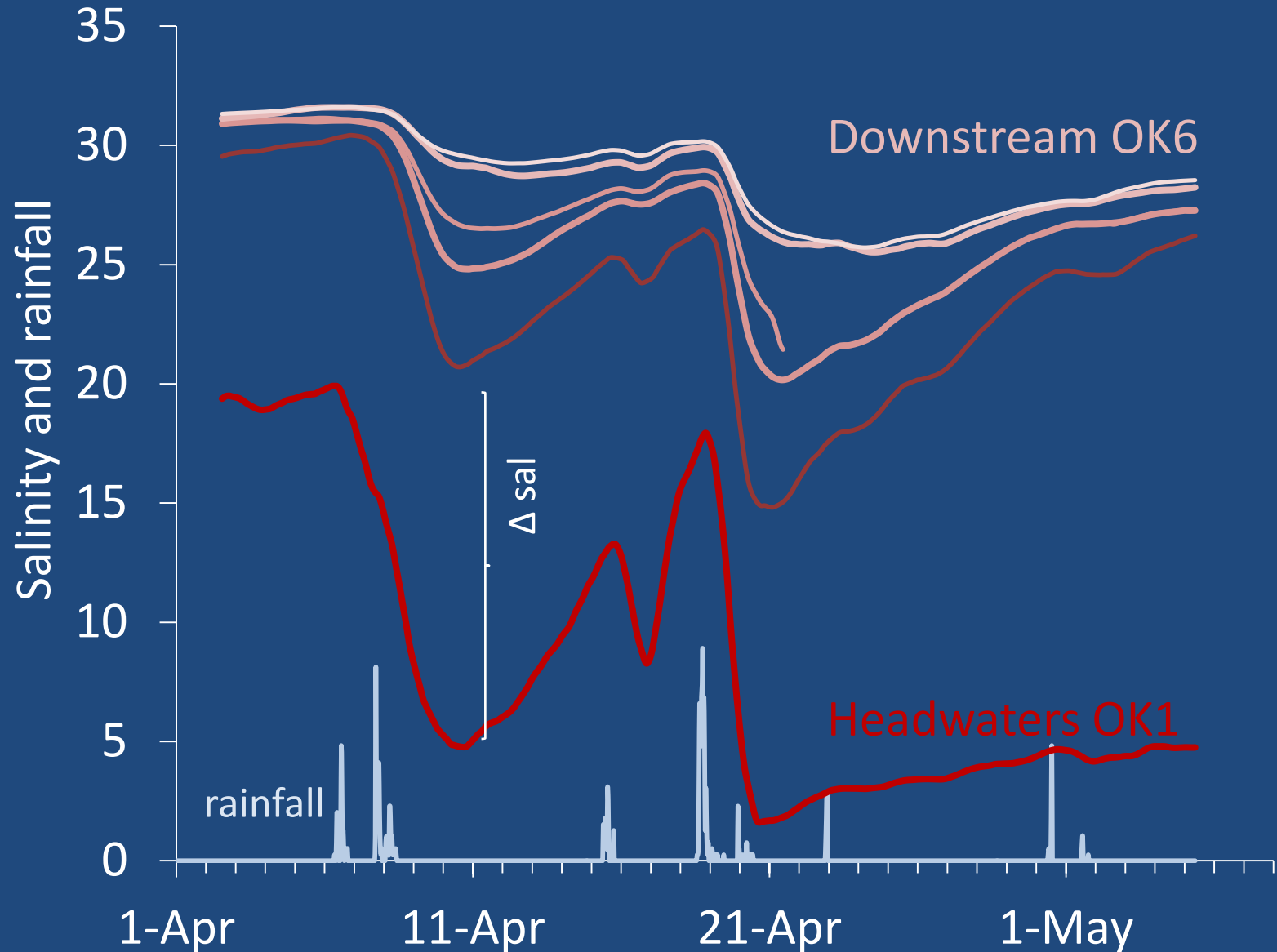
Within Watersheds



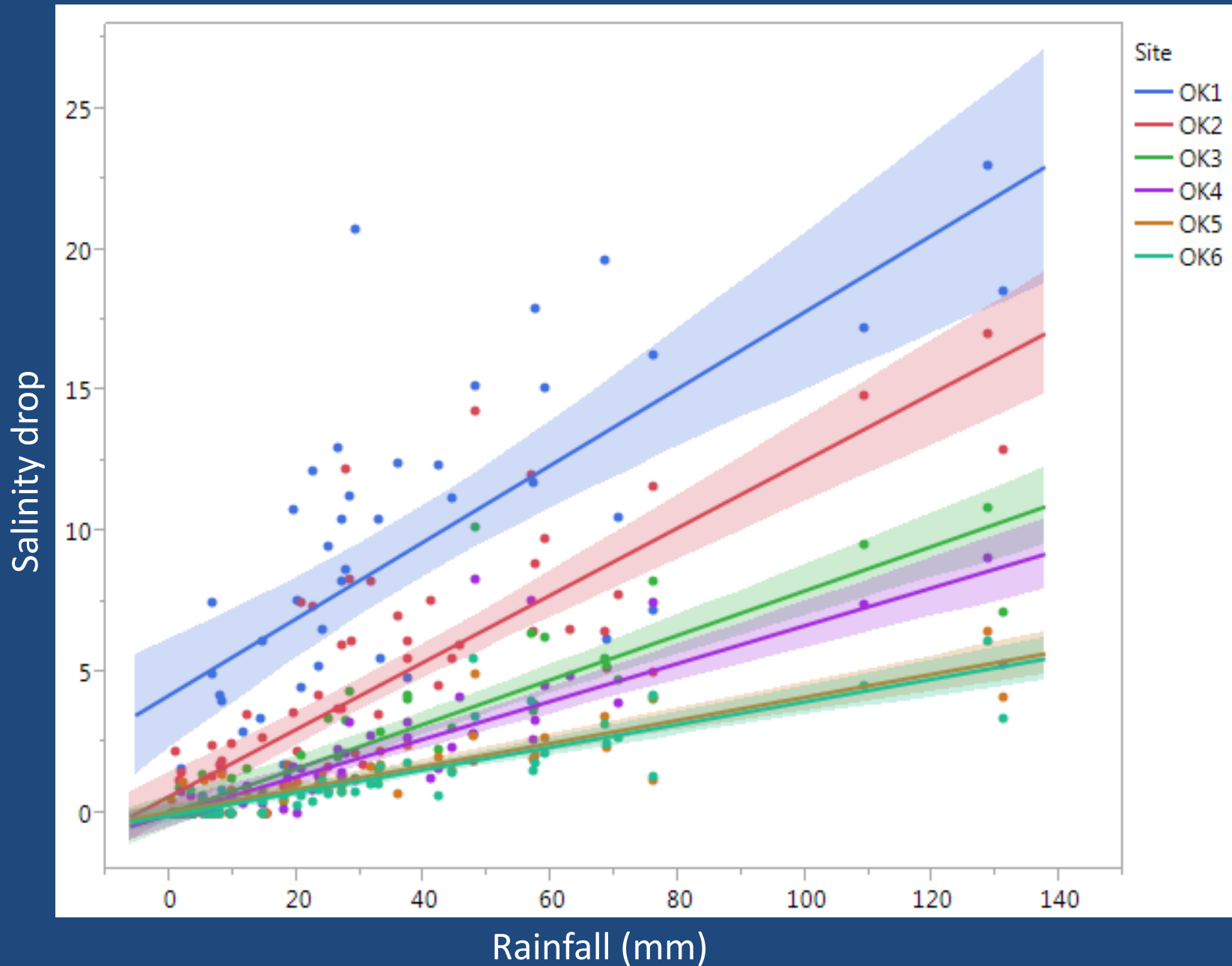
Data Preparation



Okatie River



Okatie River



Within Watersheds Model

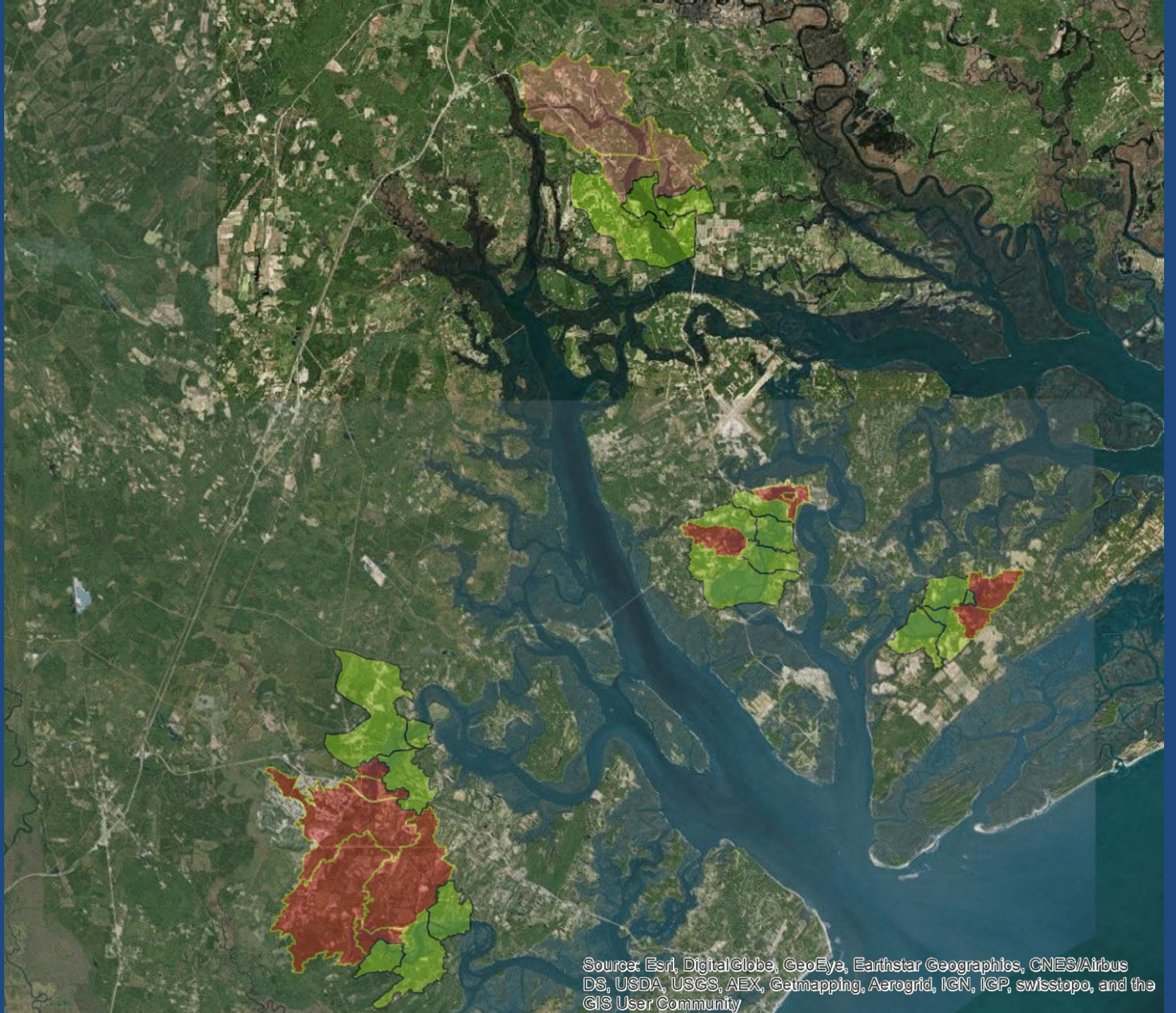
Salinity Drop/mm rainfall related to

Imperviousness (developed/soils)

Freshwater wetlands

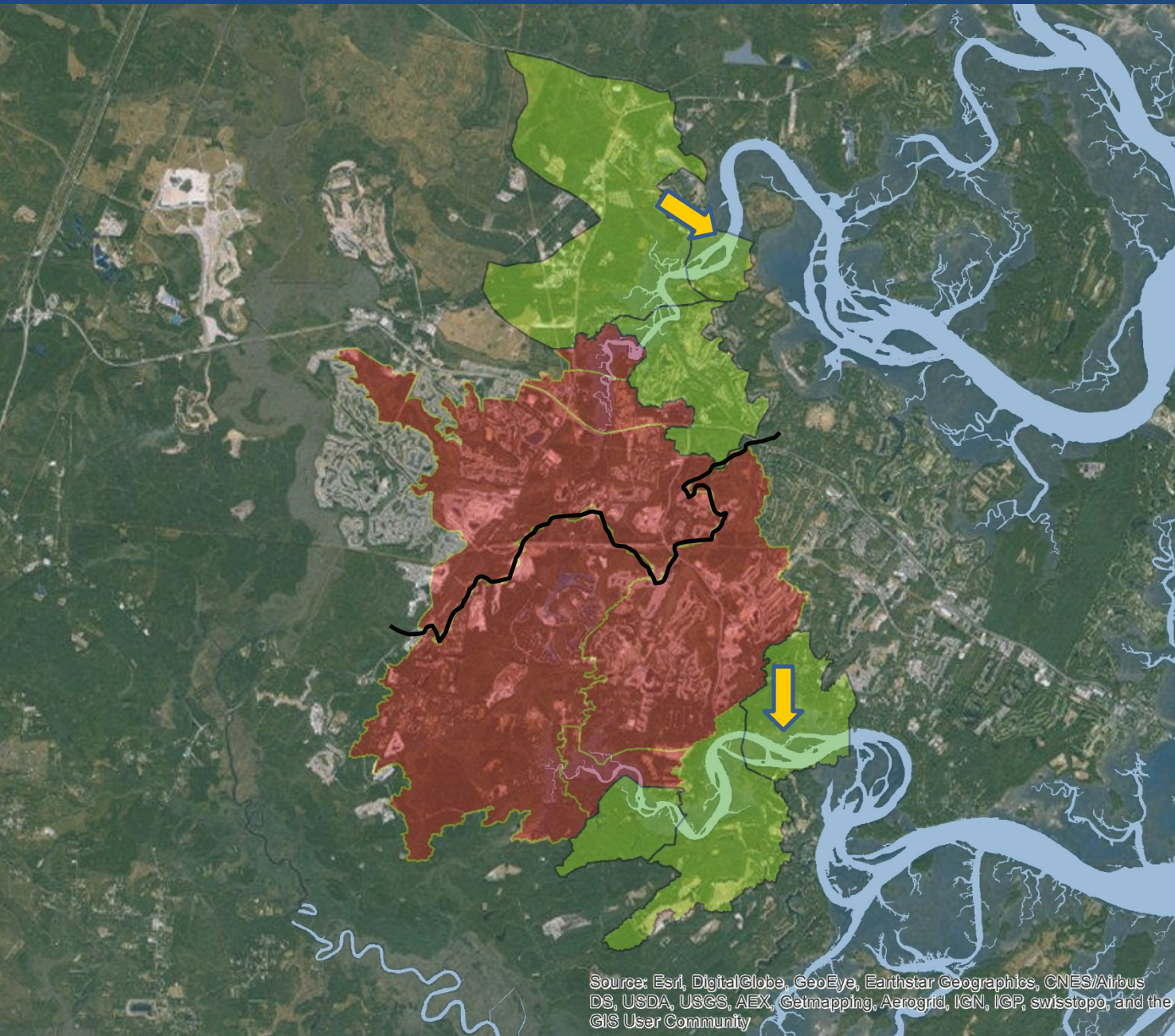
Estuarine wetlands

Creek width



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Okatie and May Rivers



Large
watersheds

Restricted

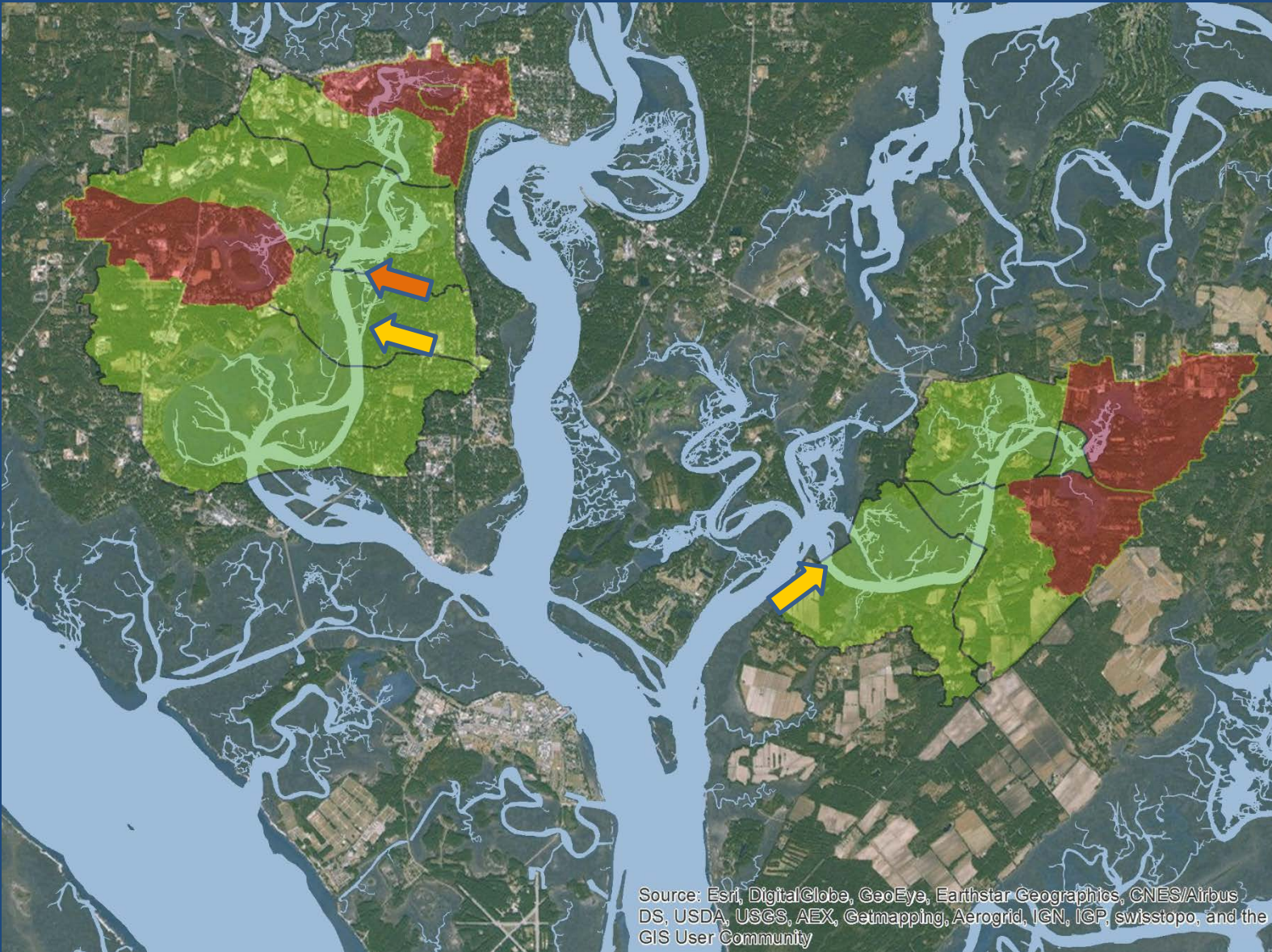
Impervious soils

Suburban

➔ Restricted
➔ Prohibited

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Battery and Wallace Creeks



Small
watersheds

Restricted/
Prohibited

Pervious soils

Suburban

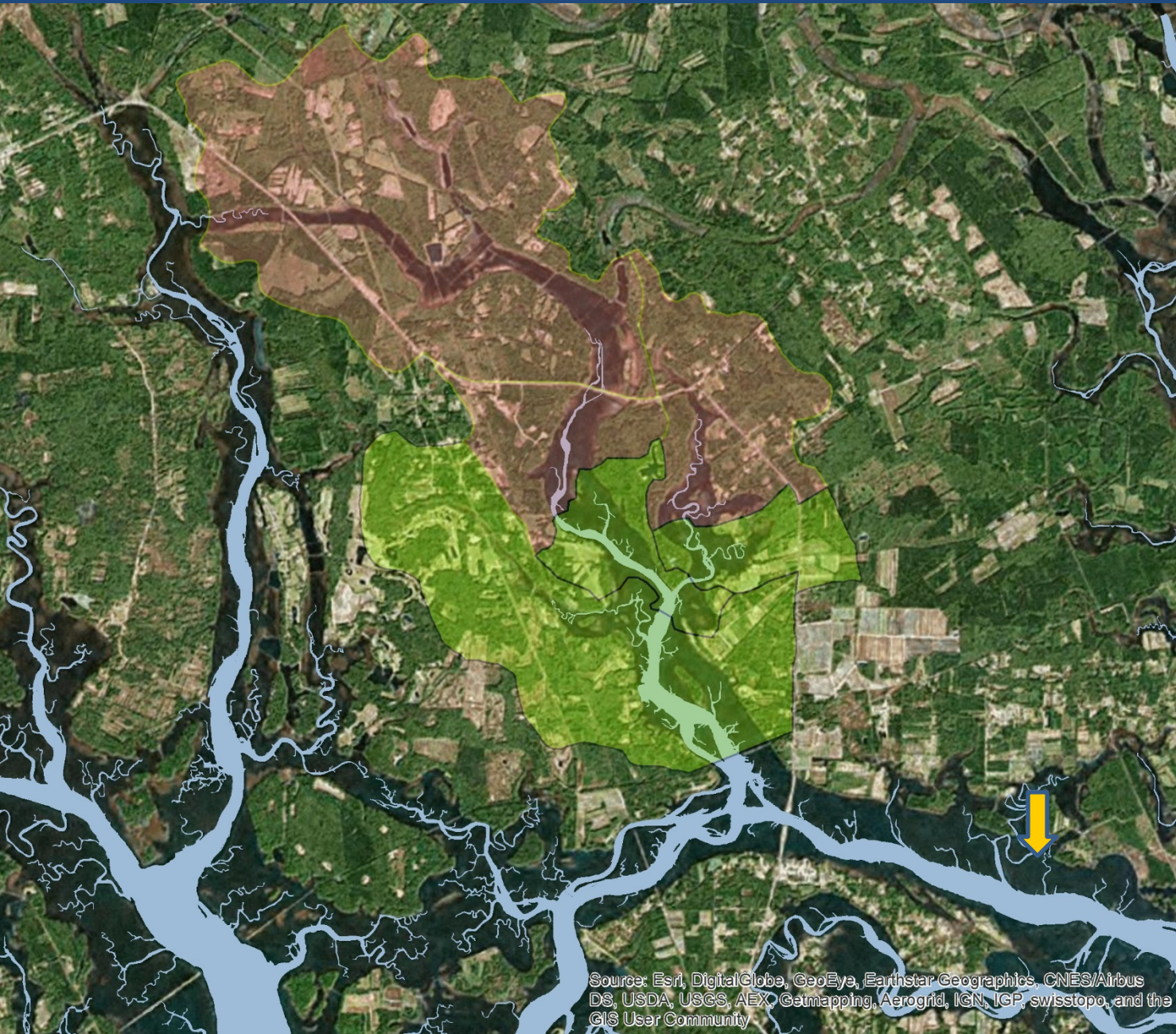
Forested

➡ Restricted

➡ Prohibited

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Huspah Creek



Large watershed

Restricted

Impervious soils

Forested/
Agriculture

➔ Restricted
➔ Prohibited

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Precipitation Impact on Estuarine Waters

Within Watersheds

Across Watersheds

Volume Impacts
(contaminants)

Impacts on
Organisms

Volume Impacts
(contaminants)

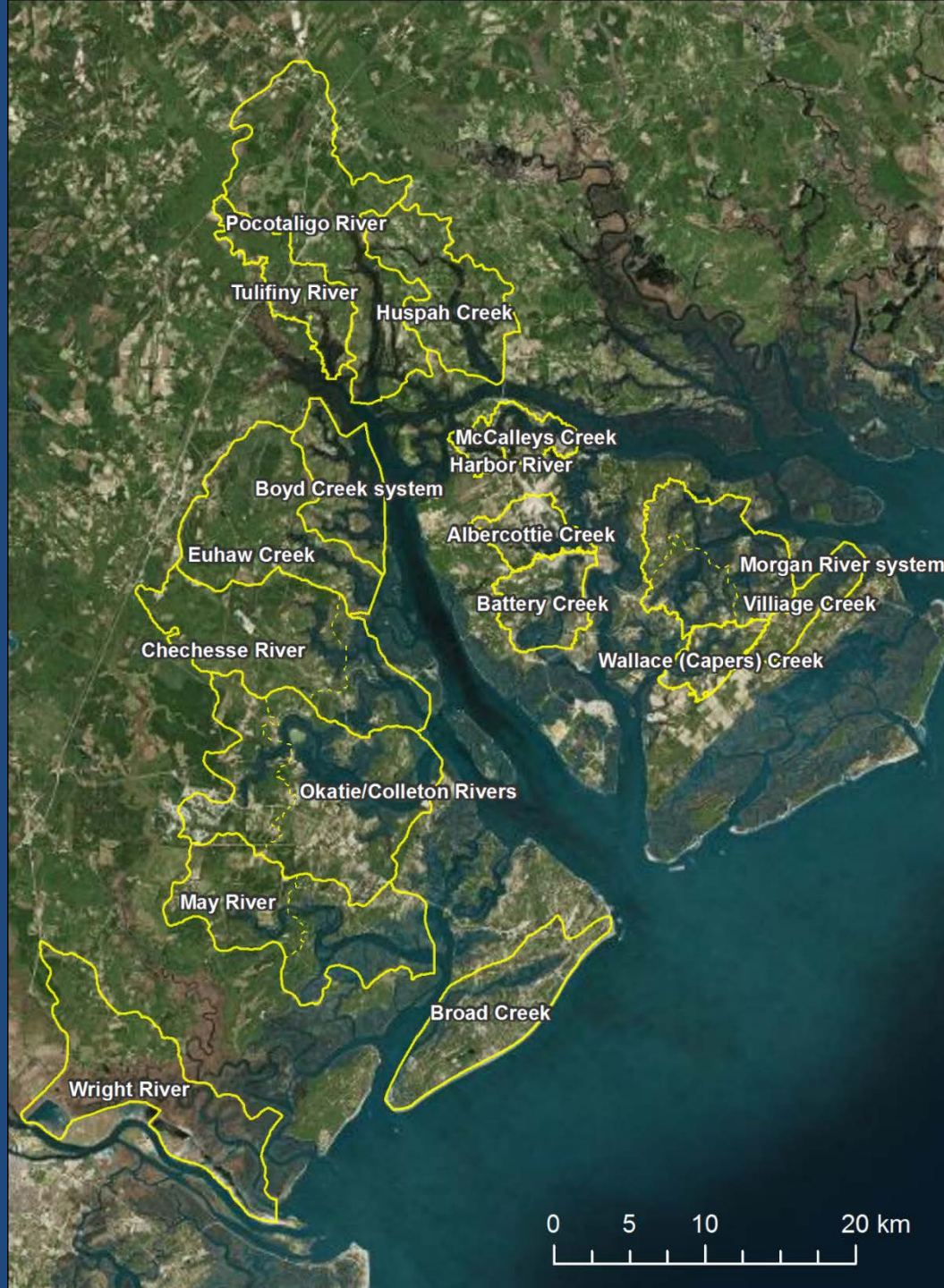
Data
Collection

Watershed
Assessment

Salinity Drop

Predictive
Models of
Sensitivity

Predictive
Models



Across Watershed Modeling

Modeling salinity drop/mm rainfall:

Model 1:
slope = % estuarine wetlands

Model 2:
slope = % estuarine wetlands
% very poorly drained soils

Model 3:
slope = % estuarine wetlands
% freshwater wetlands
% very poorly drained soils

Modeling average salinity drop:

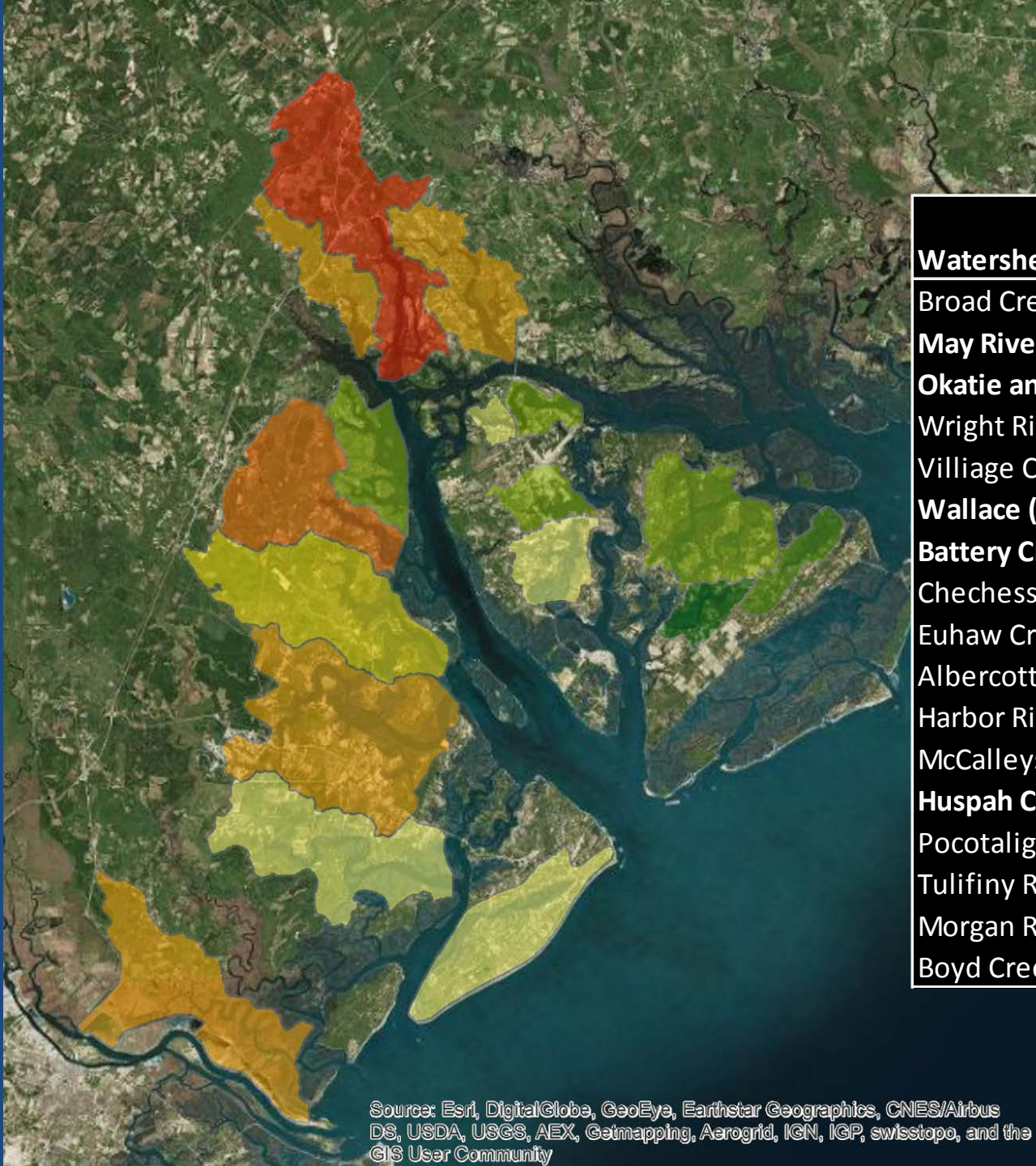
Model 1:
avg drop = watershed area

Model 2:
avg drop = watershed area
% very poorly drained soils

Model 3:
avg drop = watershed area
% very poorly drained soils
water body width at mouth



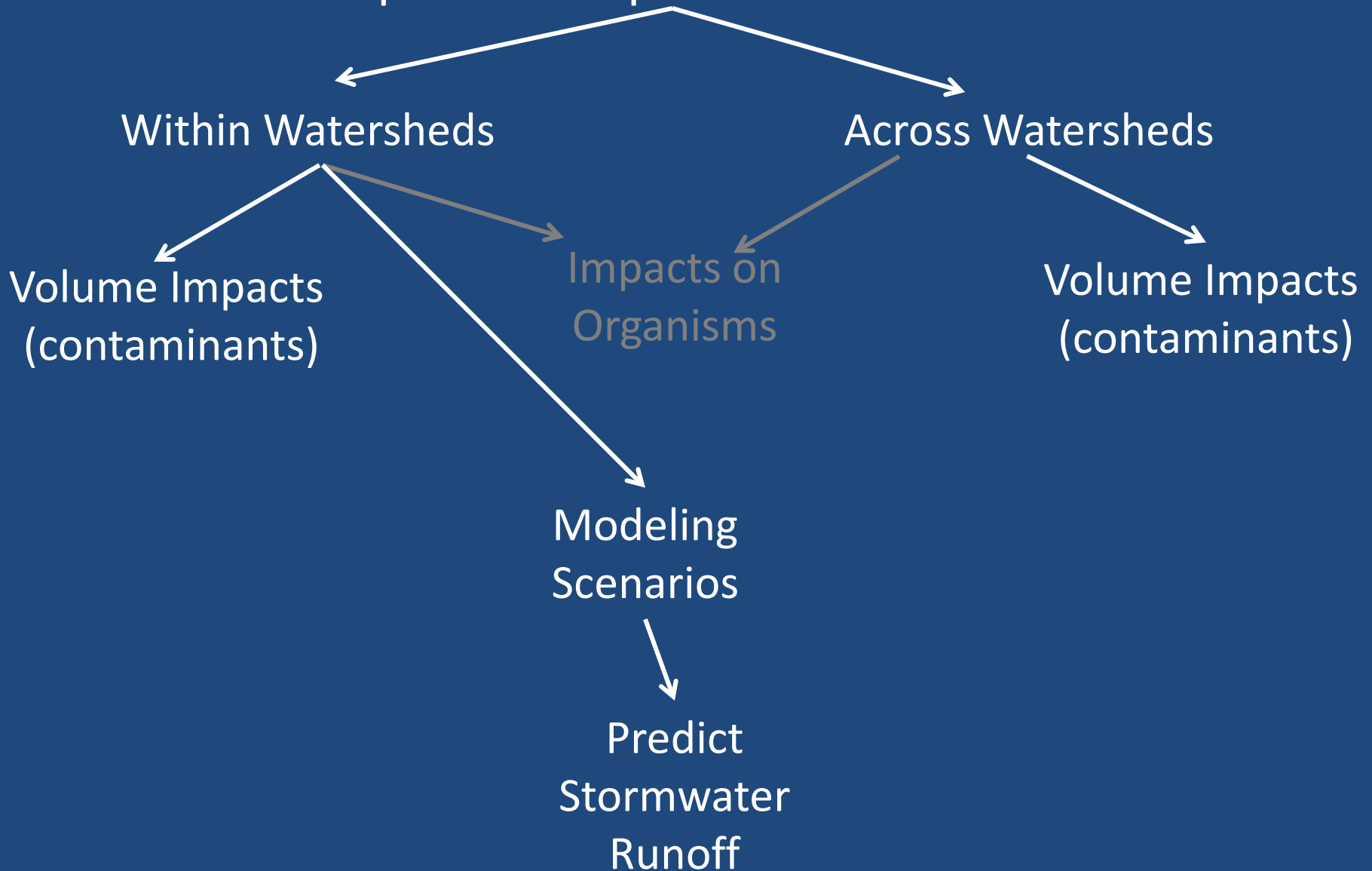
Top 25% and bottom 25% from each given 1 or -1 points respectively



Watershed	Combined 25% rank score
Broad Creek	0
May River	0
Okatie and Colleton Rivers	3
Wright River	3
Villiage Creek	-5
Wallace (Capers) Creek	-6
Battery Creek	0
Chechesse River	2
Euhaw Creek	4
Albercottie Creek	-3
Harbor River	0
McCalleys Creek	-3
Huspah Creek	3
Pocotaligo River	5
Tulifiny River	3
Morgan River system	-3
Boyd Creek system	-3

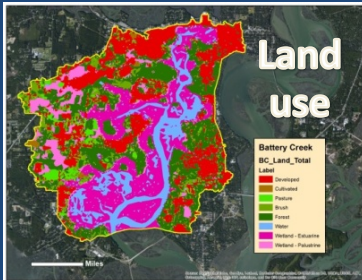
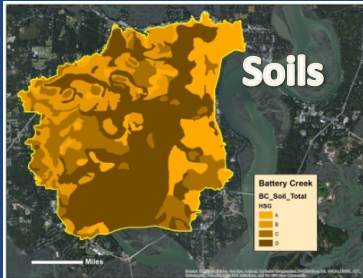
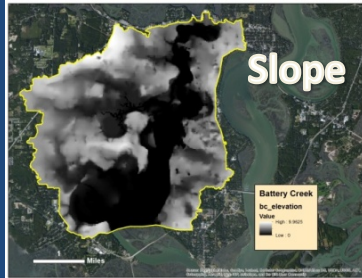
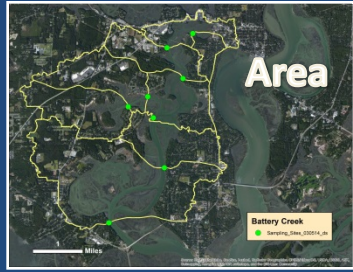
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geimapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Precipitation Impact on Estuarine Waters



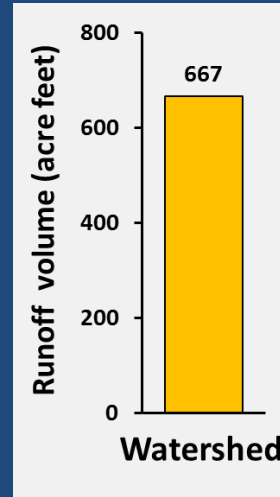
SWARM – Stormwater Runoff Modeling System

Inputs

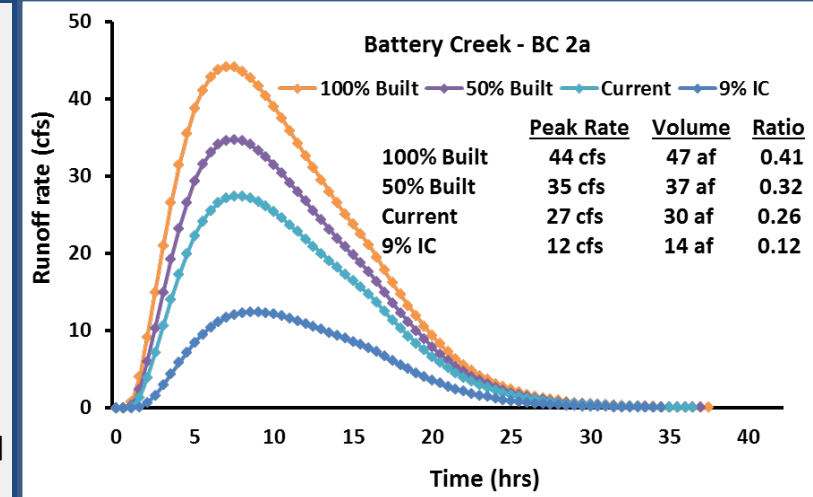


Outputs

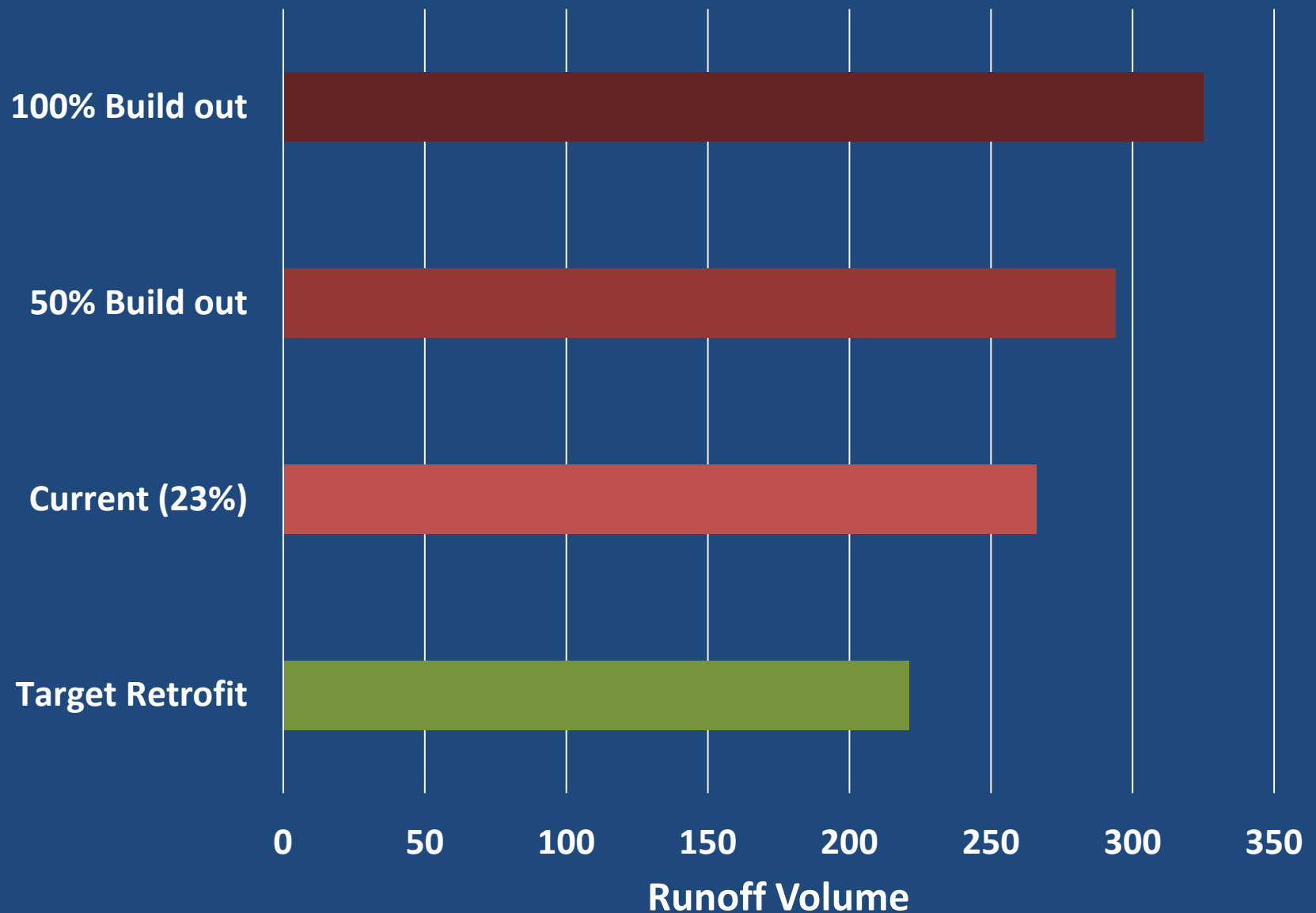
Amount



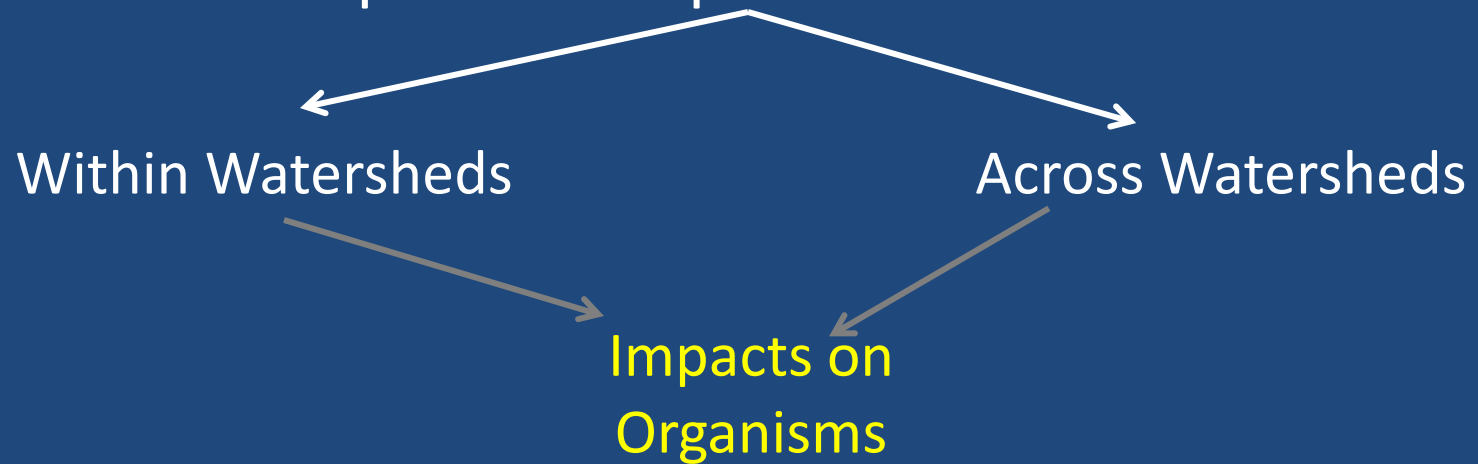
Rate & Time



SWARM – Okatie Example



Precipitation Impact on Estuarine Waters



Impacts on Estuarine Animals

- Marine zooplankton (rotifers and copepods) – change from ~30 to 15 ppt.
- Oysters spat - minimum 6 ppt for larvae to settle and metamorphose into spat.
- Blue crab larvae - minimum 20 ppt salt.
- Spotted sea trout spawn - levels above 20 ppt.
- Brown shrimp post larvae (<day 13) - < 25 ppt causing mortality.



Summary

- Sensitivity within system is correlated to (but not necessarily caused by)
 - Greater % Imperviousness
 - Greater proportion of % freshwater wetlands
 - Less proportion of % estuarine wetlands
 - Smaller creek width
- Sensitivity across systems is correlated to (but not necessarily caused by)
 - Greater proportion of freshwater wetlands
 - Larger size
 - Greater proportion of poorly draining soils
 - Less % estuarine wetlands
- Watersheds west and north of Port Royal Sound are more likely to contain sensitive headwaters than to the east; however, all are sensitive in their headwaters.
- Runoff modeling can be used to understand potential changes within a watershed.

What Does It Mean?

- Potential for impacts to living resources.
- Current on-site volume control is important
- Can predict potential volume changes with development and changing rainfall
- Ability to understand differences within watersheds based on physical characteristics
- Data available to inform management decisions
- Limited resources can be targeted to appropriate types of BMPs and policy, for example
 - Battery Creek – concentration important
 - Okatie Creek – volume (and concentration) important



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



October 21, 2015

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Utility Update

1. Mr. Eric Larson has reviewed 6 projects for County Staff Review Team.
 2. Rate Structure Ordinance and Rate Increase – Staff has been working overtime to complete the annual tax run and incorporate the new rate structure into the tax system. As of October 9, 2015, stormwater staff had 90 hours of overtime.
 3. Mr. Larson presented Beaufort County's volume control requirements at the Southeast Stormwater Association annual conference in Chattanooga, TN.
-
1. Huspah Court South Ditch Easement / Mike Zara - No agreement with the property owner has been made at this time. A meeting is pending.
 2. Island Shops Final Development Plan Review – The City of Beaufort has approved the stormwater plan. Review was completed using a consultant engineering firm.



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120 Shanklin Road
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October 21, 2015

Stormwater Manager's Report for the Stormwater Utility Board Meeting

MS4 Update

1. MS4 Permit Application – The effective date of the permit was expected to be October 1, 2015. DHEC reports they received one comment and are working to address it. They have delayed the effective date until November 1, 2015.
2. MS4 program development – Mr. Larson will be presenting a summary of the first permit year activities in New Business.
3. MS4 Staffing – The MS4 Coordinator position has been offered to Rebecca Baker, the MS4 coordinator for the City of Bartow, FL. Her anticipated start date is November 1, 2015
4. Beaufort County Pond Conference – The conference is October 22, 2015 at USCB Gateway campus in Bluffton. As of October 13, 2015 there was 73 people registered.
5. Education and Outreach – Beaufort Soil and Water Conservation District provided a monthly report at the monthly SWIC meeting. See the report as part of the meeting minutes of the SWIC.



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October 21, 2015

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Monitoring Update

1. US 278 Pond Project – The USCB lab has been processing samples from the 278 ponds which include total nitrogen, total phosphorus, fecal coliform, E.coli, and all 'in-situ' parameters. In accordance with current certification requirements, the lab has been analyzing Proficiency Test (PT) samples for all certified parameters for 2015.
2. Pre and Post Construction - USCB lab staff had a meeting with Mr. Danny Polk, Mr. Kevin Pitts, and Ms. Kim Jones about the pre and post-construction sampling for the Walmart sites.
3. SCASM Presentation - In November, Mr. Kevin Pitts (Beaufort County Stormwater Inspector) along with Ms. Kim Jones (Town of Bluffton) and Dr. Alan Warren (USCB) will report on benefits of collaborating with surrounding municipalities and utilizing local assets to meet stormwater goals.
4. USCB and County MOU for the Lab Services – Nothing new to report.

DRAFT MINUTES

October 8, 2015, 10:30am at BJWSA, 6 Snake Road, Okatie, SC

Attendees:	Eric Larson, Bryan McIllwee, Jeremy Ritchie, Kim Jones, Lamar Taylor, Van Willis, Tony Maglione, Danny Polk, Kevin Pitts, Shelby Berry, Beth Lewis, Michael Ruthsatz with Adams Outdoor Signs.
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1. Approval of Aug. 12, 2015 meeting minutes - not discussed.
2. Public Education
 - a. Report from BCSWCD ([Report Attached](#))
 - i. Report on recent activity
 1. Will be exhibiting at the Arts and Seafood Festival.
 2. ToB's MS4 101 Brochure. Beth will send out editable format for everyone's use.
 3. Poster / Essay Contest - Event to be held in schools starting in January. Displayed at Earth Day and May River sweep/Earth Day. County Channel will do media coverage. Weston Newton is sponsoring financial award to winning students.
 4. Modifying ToB's Kiosk - Beth has figured out how to edit the kiosk. Is in operation at Bluffton Library.
 5. EPA Urban Waters Small Grants - Shelby has been researching the requirements. Past awards in area like Atlanta and New Orleans. Must include community involvement. SWIC was in agreement that volunteer stream monitoring was not desirable. Applications due in Mid-November. SWIC agreed to stop pursuing it.
 - ii. Pond Conference Update - Shelby shared the draft agenda with the SWIC. Concern that registration is lower than expected. Shelby asked everyone to look at distribution lists for their area and do some follow up to try to increase registration. Walk-ins were discussed and should be allowed. We will have to figure out payment of registration after the fact. Blaik Keppler has not finalized the agenda yet. SWIC discussed that this needs to be distributed ASAP. Need to send out another mass mailer with agenda. Beth Lewis says the agenda is posted.
 - b. Adams Outdoor Advertising Partnership - Beth Lewis, Michael Ruthsatz with Adams Outdoor Signs. This is billboard advertising. We could do a billboard education campaign for N4CW. Adams does PSA all over the State and County. Costs is production of the material. Approx. \$400 or less. Design, lease space, etc. is free. They can provide marketing data like ADT on the road, etc. Space is subject to available boards. Can change locations. Sign can be 3 month lifetime or 12 month lifetime. Specific messages may be 3 months. They can also offer use of the digital board at no cost. They have about 250 billboards in Beaufort County that are possible sites. Larson noted that he has been asked why Beaufort County doesn't do billboards like Ashley - Cooper group does, so he thinks this is a good idea. Larson made motion to do this partnership, start with general logo of education and pet waste message and add more messages over time. BSWCD can coordinate messages. Shelby will email out a proposal.
 - c. SCASM - Nov. 19th - Presentation by BC, ToB, USCB lab
3. MS4
 - a. Effective date - No one had an update with DHEC.
 - b. County presentation to SWUB - ToHHI and ToB invited to share the presentation if desired.
4. Management Plan
 - a. Scope and fee - Larson noted changes made from the last version. Tony noted he will correct the change. Fee and Budget are approx. \$475,000. It was agreed to allow a contingency be in the contract due to the contract being is a fee not to exceed and not lump sum. Billing will track expenses by task. The County will share the supporting documentation with each bill reimbursement request to the municipalities. Larson will send out revised versions of the MOUs for

signatures. Larson will take the contract to the SWUB on Oct. 21. Ritchie asked for clarification on the senior modeler rate. He also asked if there is a chance to use junior modelers to reduce cost. Tony will check rates. Tony noted reasoning for using senior modelers on certain tasks. Larson noted tight budget and the need to have a detailed scope to avoid problems.

- b. Budget for FY 17 - If needed, most municipalities can roll over their portion of the \$475,000 funding from FY 16.

5. Rate Study

- a. Update on BC Rate Increase, Impact to Municipalities - Larson needs to add clarification to the Oct. 8th letter to explain the deadlines listed in the letter.
- b. Status on Towns, City Rate Study - Municipalities need to respond on the model to ATM. ATM needs to finalize the report and get to the SWUB in November.
- c. Action by Towns and City - Larson explained the need to take action soon on the final report. He discussed increased administration costs and the need to revise the IGA to reflect different management fee terms, if needed.
- d. IGA Amendment - see above.

6. Reports by each jurisdiction

- a. BC - Eric noted BC hiring a new MS4 coordinator. Danny asked if anyone else was having trouble with cigarette butts. It was suggested as a message for the billboard. Recycling can also provide support.
- b. ToHHI - Bryan noted how the Town is using access database to track complaints. He is willing to share the tool.
- c. ToB - Nothing.
- d. CoB - Nothing.
- e. ToPR – Van asked if anyone else was using chemicals for duck weed and algae control. He also asked if anyone was actively feed water fowl. Brief discussion.

7. Next Meeting

- a. Reschedule for Conflict? - November 11, 2015 - Veteran's Day. Move to Nov. 12pm, 1:00pm. Eric to confirm BJWSA community room. (NOTE: the meeting is 1pm, not 1:30pm. BJWSA community room is confirmed)
- b. Next meetings - November 12, December 9
- c. 2016 schedule - approved.

8. Adjourn at approx. 12:00 pm.

Stormwater Education Report - Beaufort Conservation District October 8, 2015

1. Pond Conference

We have been assisting people with registrations and encouraging people to sign up for the Oct 22 Neighbors for Clean Water Stormwater Pond Conference at USCB. We are hoping to have at least 75 paying attendees. There will be about 25 presenters and working staff in attendance also.

2. Festivals & Education Outreach

We are preparing for a Neighbors for Clean Water presentation at the Bluffton Art & Seafood Festival Sat. & Sun, Oct 17-18. (Two day set up was required for Environmental Displays We will have the Enviroscope set up, with information on nonpoint source pollution, and pet waste bag dispensers and flyers. We purchased a professional trifold presentation panel that can also be used at all other presentations indoors & outdoors.

3. Urban Waters Small Grants

We have been studying the EPA Urban Waters Small Grants information. The focus is on underserved communities in urban areas. In Beaufort County the eligible geographical areas are mostly south of the Broad River. Most of northern Beaufort County is not eligible except for along the banks of the Broad River. Projects must incorporate underserved volunteers working with the chosen project.

FY16 Stormwater Education Budget

	Project Category	Budget Cost	Balance	Jul-15	Aug-15	Sep-15	Oct-15
1	Survey Company & data analysis	\$2,000	2000.00		2.00		
	Prize 2 Kindle drawings	\$500	500.00				
	Printing Paper surveys	\$200	200.00				
2	MS4 Meetings 3	\$1,500	1500.00				
	Advertising	\$3,700	3700.00				
3	Community Education Programs	\$2,500	2311.56	0.5 (9.00)	5 (90.00)		
	Enviroscape & Stormwater 101			1.5 (27.00)	2 (36.00) mil 27.44		
4	nonpoint source brochures	\$5,000	5000.00				
5	Stormwater 300-600 Classes	\$1,000	1000.00				
6	Drain Markers & Accessories	\$5,750	5750.00	0.75	0.50		
7	Pond Clinic/ Conference	\$1,000	1000.00		16.25 44.80	5.50	
8	NCW Guide, printing	\$2,000	2000.00				
9	NCW Guide, artwork (# 18)	BCD Staff					
10	NCW Web updates (#18)	BCD Staff					
11	7th grade Enviroscape (85 classes)	\$4,250	4,250.00				
12	enviroscape Model	\$1,000	1000.00				
13	Education Festival, contests, booth, giveaways, flyers,& staffing events	\$5,500	5,078.35	1.5 (27.00) 5 (90.00)	3 (54.00) 28.56	2.5(45.00) 30.00 147.09	
14	NCW T-shirts	\$300	300.00				
15	Magnetic Car signs for Staff	\$400	400.00				
16	Bluffton High Rain barrels	\$2,000	2000.00				
	Rain barrel flyer	\$1,200	1,200.00				
17	Rain Garden Workshop	\$1,800	1800.00				
18	Additional BCD Staff hours for contract implementation	\$18,000	16,637.90	3.25	19.00	4.00	
	total Hours 1-17			9.25	28.75	8.00	
	Total monthly hours			12.50	47.75	12.00	
	Hours x 15 x 20%		1,300.50	225.00	859.50	216.00	
	Total #18 mileage	\$400	61.60	16.80	44.80		
	Other Expenses & Mileage 1-17				56.00	177.09	
	Totals	\$60,000	58,404.81	241.80	960.30	393.09	
		Budget	Bud. Balance	July Inv	Aug Inv	Sept Inv	Oct Inv



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



October 21, 2015

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Stormwater Related Projects

1. US 278 Retrofit Ponds (\$356,000 =Budget) – Nothing new to report. Weather has slowed progress.
2. Turtle Lane Paving on Lady's Island (Stormwater Add-On) (\$8,940 Budget) – Nothing new to report.
3. Okatie West / SC 170 Widening Retrofit Land Purchase (Land Acquisition = \$160,415 Budget, Design and Construction = \$915,000 Budget) – Closing of the property is still pending. The contract with DHEC has been signed. A RFP for design services will be issued within the next two months.
4. SC 170 Widening Pond #8 project (Land Acquisition = \$155,694 Budget, Design and Construction = \$630,840) – Closing of the property is still pending. No schedule for construction has been established.
5. Huspah Court South Ditch Easement / Mike Zara - No agreement with the property owner has been made at this time. A meeting is pending.
6. Island Shops Final Development Plan Review – The City of Beaufort has approved the stormwater plan. Review was completed using a consultant engineering firm.



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



October 21, 2015

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Professional Contracts Report

1. Utility Rate Study – The portion of the rate study for the municipalities will be completed in November and presented to the Board at the November meeting.
2. Stormwater Management Plan (Master Plan) Update - Applied Technology and Management, Inc. (ATM) and the SWIC have agreed to a scope, fee, and schedule. [See the attached memo to the Natural Resources Committee recommending entering a contract for engineering services.](#) Staff is recommending approval of the contract at this time. Please see attached supporting documents:
 - a. [RFQ 07022015 Solicitation](#)
 - b. [RRQ 07022015 Addendum 1](#)
 - c. [ATM Response to RFQ 07022015](#)
 - d. [ATM Draft Contract](#)
 - e. [ATM Fee Schedule](#)
 - f. [ATM Fee Breakdown](#)
 - g. [ATM Projected Project Schedule](#)



COUNTY COUNCIL OF BEAUFORT COUNTY
PURCHASING DEPARTMENT
102 Industrial Village Road, Building 3
Post Office Drawer 1228
Beaufort, South Carolina 29901-1228

TO: Councilman Brian Flewelling, Chairman, Natural Resources Committee

FROM: Dave Thomas, Purchasing Director

SUBJ: RFQ # 07022015 Request for Qualifications to Provide ENGINEERING AND CONSULTING SERVICES FOR 2015 BEAUFORT COUNTY STORMWATER MANAGEMENT IMPLEMENTATION GUIDE

DATE: November 2, 2015

BACKGROUND: Beaufort County Purchasing Department issued a Request for Qualifications (RFQ) for engineering and consulting services for Beaufort County Stormwater Management to assist with the department's programs and projects. The proposal requested that the vendor consultant provide services to update the 2006 Stormwater Management Plan. The Evaluation Committee consisted of five (5) staff members representing the County and the four municipal jurisdictions participating in the study: Eric Larson - Beaufort County Stormwater Management, Bryan McIlwee - Town of Hilton Head Island, Jeremy Ritchie - Town of Bluffton, Lamar Taylor - City of Beaufort, and Van Willis - Town of Port Royal. Beaufort County received four (4) responses to the RFQ. They reviewed, evaluated all RFQs and decided to interview all four (4) vendors listed below; Applied Technology & Management, Inc. (ATM) was selected and ranked the number one (1) firm. The committee further recommends that there should be prioritized alternates based on the ranking should contractual negotiations fail. The final ranking is as follows:

1. Applied Technology & Management, Okatie, SC
2. Ward Edwards Engineering, Bluffton, SC
3. Bowman Consulting Group, Ltd., Chantilly, VA
4. The Center for Watershed Protection, Ellicott City, MD

The term of the contract is effective November 10, 2015 to June 30, 2017. Contract fees for the Stormwater project were negotiated with Applied Technology & Management, Inc. (ATM), the results are attached to this recommendation. Should the County Council choose to not approve the above recommendation, County staff requests to proceed with negotiations with the second ranked firm.

FUNDING: Primary Funding - 50250011-51160, Stormwater fees.

PROPOSED COST: \$475,000

FOR ACTION: Natural Resources Committee meeting November 2, 2015.

RECOMMENDATION: The Purchasing Department recommends that the Natural Resources Committee approve and recommend to County Council approval of the contract award to Applied Technology & Management, Inc. (ATM), for ENGINEERING AND CONSULTING SERVICES FOR 2015 BEAUFORT COUNTY STORMWATER MANAGEMENT IMPLEMENTATION GUIDE.

CC: Gary Kubic, County Administrator
Josh Gruber, Deputy Administrator
Alicia Holland, Chief Financial Officer
Don Smith, Chairman, Beaufort County Stormwater Board
Eric W Larson, Director of Environmental Engineering



Beaufort County

Purchasing Department

Request for Qualifications (RFQ)

Engineering and Consulting Services

ISSUED DATE: May 22, 2015

RFQ DUE DATE/TIME: July 2, 2015, 3:00 p.m.

RFQ NUMBER: ENGINEERING AND CONSULTING SERVICES FOR
2015 BEAUFORT COUNTY STORMWATER
MANAGEMENT IMPLEMENTATION GUIDE
RFQ 07022015

SUBMIT SOQ TO: Purchasing Department
106 Industrial Village Road, Building #2
Beaufort, SC 29906-4291

Requests for information regarding this RFQ solicitation should be directed to the Purchasing Department by calling 843-255-2353 or by emailing Dave Thomas at dthomas@bcgov.net.



COUNTY COUNCIL OF BEAUFORT COUNTY
PURCHASING DEPARTMENT

106 Industrial Village Road, Bldg 2 Post Office Drawer 1228
Beaufort, South Carolina 29901-1228

David L. Thomas, Purchasing Director
dthomas@bcgov.net 843.255.2350

PROPOSAL NOTICE NO. 07022015 Page 1 of 34
CLOSING DATE AND TIME: July 2 2015, at 3:00 p.m. EST
PROPOSAL TITLE: Engineering and Consulting Services for 2015 Stormwater
Management Implementation Guide

You are invited to submit a Statement of Qualification (SOQ) in accordance with the requirements of this solicitation which are contained herein.

In order for your SOQ to be considered, it must be submitted to the Purchasing Department no later than July 2, 2015, 3:00 p.m., at which time respondents to this request will be recorded in the presence of one or more witnesses. SOQ received by the Purchasing Department after the time specified will be returned to the Consultant unopened. Due to the possibility of negotiation with all Consultants, the identity of any Consultant or the contents of any SOQ shall not be public information until after the contract award is made; therefore, the public is not invited to the proposal closing.

The SOQ must be signed by an official authorized to bind the Consultant, and it shall contain a statement to the effect that the proposal is firm for a period of at least 90 days from the closing date for submission of SOQ. **SOQ must be submitted in a sealed opaque envelope/container showing the above proposal number, closing date, and title.**

All submittals (see Part VII, Submission Requirements) received in response to this Request for Qualifications will be rated by a Selection Committee, based upon the Award Criteria as listed in Part VIII. If the best Consultant is clearly identified from the point summary, there will not be a need for oral presentations. If not, then an oral presentation from a minimum of the top two rated firms shall be required.

This solicitation does not commit Beaufort County to award a contract, to pay any costs incurred in the preparation of a SOQ, or to procure or contract for the articles of goods or services. The County reserves the right to accept or reject any or all SOQ received as a result of this request, to negotiate with all qualified Consultants, or to cancel in part or in its entirety this solicitation, if it is in the best interests of the County to do so.

Dave Thomas
Purchasing Director
(843) 255-2353

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SECTION I

PREFACE

Beaufort County, The Towns of Hilton Head Island, Bluffton, Port Royal, and the City of Beaufort (collectively known as “the County”) occupy a unique environment of major water sheds and wet land areas that are vital to the survival of marine and aquatic ecosystems far beyond its shores and the confluence of its rivers. To preserve the health of these ecosystems, the County has a thorough stormwater regulatory program to ensure that stormwater runoff, sediment control and water quality meet and exceed Federal and State requirements.

The Scope of Work, described in more detail below, includes comprehensive review and update of the 2006 Beaufort County Stormwater Management Plan, with the end product being known as the “2015 Beaufort County Stormwater Management Implementation Guide”, or “the Guide”. In addition to the foregoing, the consulting firm or firms will perform other duties related to stormwater activities outlined in the SCOPE OF SERVICES.

SECTION II

INTENT AND SCOPE OF SERVICES

INTENT

Beaufort County seeks qualifications and proposals from consultants to provide, on a program demand, various unspecified surveying and stormwater management engineering services. These services shall be provided under a service contract. The service contract shall not guarantee the successful consultant of a specified dollar value of work or limit the County's right to seek proposals and award other stormwater services to consultants other than the one selected for this services contract. The County reserves the right to make multiple awards from this solicitation for the services contemplated in this proposal.

BACKGROUND

In the mid-1990's, growing concern about how rapid development may be impacting the environment, a Clean Water Task Force was formed and began to study these impacts and began to quantify stormwater runoff impacts on the estuary. In 2001 Beaufort County, The Towns of Hilton Head Island, Bluffton, Port Royal, and the City of Beaufort (collectively known as “the County”) created the current Stormwater Utility to begin to address not only flooding issues but also current stormwater design practices and their impacts on the estuarine environment. Up until 2006, stormwater management was flood prevention management and focused primarily on moving stormwater away from roads and developments as rapidly as possible with minimal concerns for the impacts the rapid movement of stormwater had on the unique and sensitive estuarine environment that exists throughout Beaufort County.

In February 2006 Thomas & Hutton Engineers and Camp Dresser and McKee, Inc. completed the first overall Stormwater Management Plan (SWMP) for Beaufort County. This study was undertaken as the overall water quality within waterbodies in the County and its adjoining municipalities were being adversely impacted by rapid growth in many areas of the County. In addition to water quality issues, the County was also experiencing flooding in a number of areas.

Later in 2006, the County began implementation of recommendations from the SWMP. The major recommendations of the SWMP included:

- Establish a Level of Service (LOS) and Extent of Service (EOS) for both water quality and flood control
- Identify areas where increases in the conveyance capacity of the Primary Stormwater Management System and/or stormwater retention was needed to control peak stormwater flow and flooding
- Implement a series of Stormwater Best Management Practices (BMPs) to provide treatment of stormwater prior to its discharge to the estuary
- Identify and create where practicable regional stormwater treatment facilities, especially in already developed areas
- Implement development controls and the inclusion of BMPs for all new land developments
- Create a GIS-based inventory of all stormwater conveyance systems in the County

Since 2006 the County has:

- Established the LOS and EOS for the County Stormwater Utility
- Developed a Capital Improvements Plan to implement findings of the 2006 SWMP modeling efforts and recommendations for both flooding and water quality improvement
- Created an in-depth and detailed Stormwater BMP manual for use with all development within the County
- Began key stormwater retrofit projects
- Implemented ordinances that require stormwater treatment and discharge systems to meet certain requirements
- Continued to build its inventory of existing stormwater conveyance systems

Since the 2006 SWMP was implemented, the County has experienced continued growth in critical areas of the estuary and continued closure of Shellfish Harvesting Areas. To address these issues, as well as new federally mandated regulations, the County has voluntarily developed and implemented new strict Stormwater Volume Control Regulations. Portions of the un-incorporated County and the Towns of Hilton Head Island and Bluffton have been designated by SCDHEC as a Phase II Small MS4 community (MS4). In addition, the County has had a TMDL placed on the Okatie River, Colleton River, and Beaufort River. All of these major changes as well as new and changing growth patterns related to development have resulted in the need to update

the 2006 SWMP.

One of the most far-reaching federal regulations the County must implement are the MS4 regulations. These regulations provide a specific time line and requirements the County's MS4s must implement as part of their SWMPs and will impact how the Stormwater Utility operates. Under the MS4 regulations, the MS4s are required to submit to SCDHEC their Notice of Intent (NOI) for coverage under the SCDHEC General MS4 permit. The NOI outlines how the MS4 will implement the following permit requirements:

- Public Education Program
- Public Involvement Program
- Sediment and Erosion Control for all public and private construction projects
- Illicit discharge and detection program
- Post-development stormwater system management
- Good housekeeping of public facilities

The MS4 regulations have the same goal the County has had since the mid 1990's, water quality improvement.

SCOPE OF SERVICES

The following is a detailed Scope of Work needed to develop the Guide and to integrate the former SWMP with the new requirements outlined below. A summary of the Scope of Work is as follows:

- Perform an in-depth review of the 2006 SWMP to identify areas needing updating
- Update growth area mapping throughout the County and Municipalities to determine growth and infill areas since 2006
- Review hydraulic and water quality modeling performed in 2006 and update models in priority watersheds focusing on watersheds with significant development and/or growth since 2006
- Investigate documented customer complaints to identify areas of concern
- Compare current findings against 2006 SWMP findings, develop an updated SWMP and revised Capital Improvements Plan (CIP)
- Facilitate regional public meetings to gain citizen input on stormwater concerns and issues
- Integrate MS4 requirements into the Guide
- Develop ordinance(s) language to facilitate MS4 and SWMP implementation
- Develop technical guidance for manual updates of stormwater management requirements
- Revisit Level of Service and Extent of Service guidance and update so align with the SWMP update
- Create a SWMP Operational plan

- Assist with presentations of the Guide results and findings to County and municipal committees, board and/or councils.

SECTION III

CONDITIONS SPECIFIC TO THIS RFP/CONTRACT AND TERM

CONDITIONS SPECIFIC TO THIS RFQ

The Contract will be on the basis of an hourly rate plus expenses with a Contract maximum. The Consultant will be required to assume sole responsibility for the complete effort as required by this RFQ. Beaufort County will consider the Consultant to be the sole point of contact with regard to contractual matters.

CONTRACT TERM

The term of this contract shall be negotiated and based on the length of the project. The Consultant must maintain the insurance coverages required by the County while this contract is in force, and shall provide documentation of such insurance in a form satisfactory to the County when required.

[The performance period will be as specified unless Beaufort County elects to accept a longer period of performance based on justifications submitted by responsive Consultants. Approval of a performance period beyond the date specified will be in accordance with the Beaufort County Procurement Code and Regulations.]

SECTION IV

CALENDAR OF EVENTS

EVENT

Issue Request for Qualifications
Deadline for Questions
Deadline for Addendum issuance (as needed)
All SOQ Due
Evaluation of SOQ
Oral Presentation(s) to Selection Committee
Recommendation to Stormwater Utility Board
Approvals by Council(s) to negotiate contract
Negotiations
Recommend Award to Natural Resources Committee

Approval of MOA for partnership on project
Town of Hilton Head Island
Town of Bluffton
Town of Port Royal
City of Beaufort

Recommendation of Award to County Council
Notice to Proceed

Date

May 22, 2015
June 19, 2015
June 26, 2015
July 2, 2015
July 6 – 31, 2015
August 10-14, 2015
August 26, 2015
Aug. 27 - Sept. 4, 2015
Sept. 7- 25, 2015
October 5, 2015

_____ TBD _____, 2015
_____ TBD _____, 2015
_____ TBD _____, 2015
_____ TBD _____, 2015

October 12, 2015
October 13, 2015

SECTION V

GENERAL TERMS AND CONDITIONS/SPECIAL INSTRUCTIONS

GENERAL TERMS AND CONDITIONS

- 1.0 FORCE MAJURE: The Consultant shall not be liable for any excess costs if the failure to perform the contract arises out of causes beyond the control and without the fault or negligence of the Consultant. Such causes may include, but are not restricted to acts of God or of the public enemy, acts of the Governments in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the Consultant. If the failure to perform is caused by the default of a sub-consultant, and if such default arises out of causes beyond the control of both the Consultant and sub-consultant, and without the fault or negligence of either of them, the Consultant shall not be liable for any excess costs for failure to perform, unless the supplies or services to be furnished by the sub-consultant were obtainable from other sources in sufficient time to permit the Consultant to meet the required delivery schedule.

- 2.0 GOVERNING LAW: Consultant consents to be governed by Section 11-35-4230 of the South Carolina Code of Laws and agrees that Section 11-35-4230 applies to and governs the Agreement. Consultant waives any objection it may have now or hereafter to the administrative process required by Section 11-35-4230. To the extent that Section 11-35-4230, by its own terms, does not govern a claim or controversy arising out of or relating to the Agreement, Consultant agrees that any suit, action or proceeding arising out of or relating to the Agreement shall be instituted and maintained only in a state or federal court located in Beaufort County, State of South Carolina. Notwithstanding any other agreement between Consultant and the State, the Agreement shall be governed by and construed in accordance with the laws of the State of South Carolina, and any suit, action or proceeding arising out of or relating to the Agreement shall be governed by the laws of the State of South Carolina. Consultant agrees that any act by the State regarding the Agreement is not a waiver of either the State's sovereign immunity or the State's immunity under the Eleventh Amendment of the United State's Constitution. As used in this paragraph, the term "Agreement" means any transaction or agreement arising out of, relating to, or contemplated by this solicitation. As used in this paragraph, the phrase "the State" includes any governmental entity transacting business with Consultant pursuant to the Agreement and the South Carolina Budget & Control Board.

- 3.0 CONSULTANT'S QUALIFICATION: Consultant must, upon request of Beaufort County, furnish satisfactory evidence of its ability to furnish products or services in accordance with the terms and conditions of this proposal. The County reserves the right to make the final determination as to the Consultant's ability to

provide the services requested herein.

- 4.0 CONSULTANT RESPONSIBILITY: Each Consultant shall fully acquaint himself with conditions relating to the scope and restrictions attending the execution of the work under the conditions of this proposal. It is expected that this will sometimes require on-site observation. The failure or omission of a Consultant to acquaint himself with existing conditions shall in no way relieve him of any obligation with respect to this proposal or to the contract.
- 5.0 AFFIRMATIVE ACTION: The Consultant will take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of race, color, religion, sex, national origin or physical handicap. The following are incorporated herein by reference: 41 C.F.R. 60-1.4, 60-250.4 and 60-741-4.
- 6.0 TERMINATION: Subject to the Provisions below, any contract resulting from this proposal may be terminated by Beaufort County provided a thirty (30) days advance notice in writing is given to the Consultant.
 - 6.1. Non-Appropriations: Funds for this contract are payable from State and/or Federal and/or Beaufort County appropriations. In the event sufficient appropriations are not made to pay the charges under the contract it shall terminate without any obligation to Beaufort County.
 - 6.2. Convenience: In the event that this contract is terminated or canceled upon request and for the convenience of Beaufort County without the required thirty (30) days advance written notice, then Beaufort County shall negotiate reasonable termination costs, if applicable.
 - 6.3. Cause: Termination by Beaufort County for cause, default or negligence on the part of the Consultant shall be excluded from the foregoing provisions; termination costs, if any shall not apply. The thirty (30) days advance notice requirement is waived and the default provision listed herein shall apply.
 - a. Default: In case of default on Consultant, Beaufort County reserves the right to purchase any or all items/services in default in open market, charging Consultant with any excessive costs. SHOULD SUCH CHARGE BE ASSESSED, NO SUBSEQUENT PROPOSALS OF THE DEFAULTING CONSULTANT WILL BE CONSIDERED UNTIL THE ASSESSED CHARGE HAS BEEN SATISFIED.
- 7.0 PRIME CONSULTANT RESPONSIBILITIES: The Consultant will be required to assume sole responsibility for the complete effort as required by this RFQ. Beaufort County will consider the Consultant to be the sole point of contact with

regard to contractual matters.

- 8.0 SUBCONSULTING: If any part of the work covered by this RFQ is to be subcontracted, the Consultant shall identify the subcontracting organization and the contractual arrangements made therewith. All sub-consultants must be approved by Beaufort County. The successful Consultant will also furnish the corporate or company name and the names of the officers of any sub-consultants engaged by the Consultant. Please include names of key personnel and resumes of all sub-consultants in the SOQ.
- 9.0 OWNERSHIP OF MATERIAL: Ownership of all data, material and documentation originated and prepared for Beaufort County pursuant to this contract shall belong exclusively to Beaufort County.
- 10.0 LEGAL OR CONSULTANT SERVICES: If this contract is for legal or consultant services, it is subject to the provisions of Section 11-9-105 of the 1976 Code of Laws of South Carolina as amended. "Any contract for legal or consultant services entered into by a state agency or institution shall include a provision which requires completion of all services. The Provisions shall further require that in the event all services are not fully rendered as provided for in the contract, any Monies which have been paid by the agency under the contract must be refunded to the agency along with a twelve (12) percent penalty".
- 11.0 INDEMNIFICATION: Beaufort County, its officers, agents and employees shall be held harmless from liability from any claims, damages and actions of any nature arising from a resultant contract, provided that such liability is not attributable to negligence on the part of the using agency or failure of the using agency to comply with the offer as outlined in the Consultant's proposal.
- 12.0 COMPLIANCE WITH FEDERAL REQUIREMENTS: State or Federal requirements that are more restrictive shall be followed.
- 13.0 CONTRACT FORMAT: When applicable, the Consultant shall also be required to abide by all the covenants, conditions, responsibilities, terms and stipulations as set forth in the contract format (attachment and accompanying schedules). Said contract format is subject to change prior to final execution of any contract which is awarded subsequent to this Request for Qualifications.
- 14.0 DRUG-FREE WORKPLACE: (Note: This clause applies to any resultant contract of \$50,000 or more). The State of South Carolina has amended Title 44, code of Laws of South Carolina, 1976, relating to health, by adding Chapter 107, so as to enact the Drug-Free Workplace Act. (See Act No. 593, 1990 Acts and Joint Resolutions). By submission of a signed proposal, you are certifying that you will comply with this Act. (See Section 44-107-30). This will certify to the using agency your compliance.
- 15.0 PURCHASING LIABILITY: The Purchasing Department of Beaufort County is

acting under the authority given to it in the Consolidated Procurement Code to procure contracts on behalf of governmental agencies and acts only as their agent in this respect. The resulting contract is between the agency and the successful Consultant and the Purchasing Department bears no liability for any damages that any party may incur in the execution or enforcement of the contract.

- 16.0 CONTRACT AMENDMENTS: Amendments to any contract between the agency and the Consultant must be reviewed and approved by the Purchasing Department.
- 17.0 ASSIGNMENT: No contract or its provisions may be assigned, sublet, or transferred without the written consent of the Purchasing Department.
- 18.0 RECORDS RETENTION & RIGHT TO AUDIT: The County shall have the right to audit the books and records of the Consultant as they pertain to this contract, both independent of, and pursuant to, S.C. Code Section 11-35-2220. Such books and records shall be maintained for a period of three (3) years from the date of final payment under the contract.

The County may conduct, or have conducted, performance audits of the Consultant. The County may conduct, or have conducted, audits of specific requirements of this bid as determined necessary by the County.

Pertaining to all audits, Consultant shall make available to the County access to its computer files containing the history of contract performance and all other documents related to the audit. Additionally, any software used by the Consultant shall be made available for auditing purposes at no cost to the County.

- 19.0 Certification regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion: The Consultant certifies, by submission of this document or acceptance of a contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any State, Federal department, or agency. It further agrees by submitting this qualification statement that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the Consultant or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/bid.

SPECIAL INSTRUCTIONS

- 1.0 INTENT TO PERFORM: It is the intent and purpose of Beaufort County that this request permits competition. It shall be the Consultant's responsibility to advise

the Purchasing Department of Beaufort County if any language, requirements, etc., or any combinations thereof, inadvertently restricts or limits the requirements stated in this RFQ to a single source. Such notification must be submitted in writing, and must be received by the Purchasing Department of Beaufort County within fifteen (15) days of the date of issue. A review of such notifications will be made.

2.0 RECEIPT OF SOQ: State law requires that a copy of the SOQ be submitted no later than the date and time specified in the Request for Qualifications. **Consultants mailing proposals should allow a sufficient mail delivery period to insure timely receipt of their SOQ by the issuing office.** Any SOQ received after the scheduled opening date and time will be immediately disqualified in accordance with the SC Consolidated Procurement Code and Regulations.

3.0 PREPARATION OF SOQ:

3.1 All SOQ should be complete and carefully worded and must convey all of the information requested by Beaufort County. If significant errors are found in the Consultant's SOQ, or if the SOQ fails to conform to the essential requirements of the RFQ, Beaufort County and Beaufort County alone will be the judge as to whether that variance is significant enough to reject the SOQ.

3.2 SOQ should be prepared simply and economically, providing a straightforward, concise description of Consultant's capabilities to satisfy the requirements of the RFQ. Emphasis should be on completeness and clarity of content.

3.3 If your SOQ includes any comment over and above the specific information requested in our Request for Qualifications, you are to include this information as a separate appendix to your SOQ.

4.0 DISCUSSION/NEGOTIATION: By submission of a SOQ, Consultant agrees that during the period following issuance of a SOQ and prior to final award of contract, Consultant shall not discuss this Procurement with any party except members of the Purchasing Department of Beaufort County or other parties specifically designated in this solicitation. Consultant shall not attempt to discuss with or attempt to negotiate with the using Agency any aspect of the procurement without prior approval of the Director of Purchasing.

5.0 AMENDMENTS:

5.1 VERBAL COMMENTS OR DISCUSSIONS BY THE COUNTY RELATIVE TO THIS SOLICITATION CANNOT ADD, DELETE OR MODIFY ANY WRITTEN PROVISION. ANY ALTERATION MUST BE IN THE FORM

OF A WRITTEN AMENDMENT TO ALL CONSULTANTS.

- 5.2 If it becomes necessary to revise any part of the RFQ, an amendment will be provided to all eligible Consultants.
- 6.0 ORAL PRESENTATIONS: Consultants may be requested to make oral presentations of their SOQ to a Selection Committee. Such presentations provide an opportunity for the Consultants to clarify their proposals and to ensure a thorough understanding.
- 7.0 FUNDING: The Consultant shall agree that funds expended for the purposes of the contract must be appropriated by the General Assembly of the County Council for each fiscal year included within the contract period. Therefore, the contract shall automatically terminate without penalty or termination costs if such funds are not appropriated. In the event that funds are not appropriated for the contract, the Consultant shall not prohibit or otherwise limit the Agency's right to pursue and contract for alternate solutions and remedies as deemed necessary by the Agency for the conduct of its affairs. The requirements stated in this paragraph shall apply to any amendment or the execution of any option to extend the contract.
- 8.0 AWARD: An award resulting from this request shall be awarded to the responsive and responsible Consultant(s) whose SOQ is determined to be most advantageous to Beaufort County, taking into consideration the evaluation factors set forth herein; however, the right is reserved to reject any and all SOQ received and in all cases, Beaufort County will be the sole judge as to whether an Consultant's SOQ has or has not satisfactorily met the requirements of this RFQ.
- 9.0 SUBMITTING CONFIDENTIAL INFORMATION:
- a. OVERVIEW / APPLICABLE STATUTES: Under the South Carolina Freedom of Information Act ("FOIA"), certain documents an Consultant submits to the State may be subject to public disclosure. All references are to the South Carolina Code of Laws, which is available on the Internet at: <http://www.lpittr.state.sc.us/code/statmast.htm>. Consultants are urged to become familiar with FOIA (Title 30, Chapter 4 of the Code), the Trade Secrets Act (Title 39, Chapter 8), and the Consolidated Procurement Code (Title 11, Chapter 35). Section 11-35-410 of the Procurement Code exempts certain procurement information from release under FOIA: Commercial or financial information obtained in response to a 'Request for Qualifications' or any type of solicitation which is privileged and confidential need not be disclosed. Privileged and confidential information is information in specific detail not customarily released to the general public, the release of which might cause harm to the competitive position of the party supplying the information. Examples of this type of information would include: (1) customer lists; (2) design recommendations

and identifications of prospective problem areas under an RFQ; (3) design concepts, including methods and procedures; (4) biographical data on key employees of the bidder."

- b. INSTRUCTIONS: In determining whether to release documents, the State will detrimentally rely on Consultant's marking of documents, as required by these instructions, as being either "CONFIDENTIAL" or "TRADE SECRET". For every document Consultant submits in response to or with regard to this solicitation, Consultant must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that Consultant contend contains information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a) (1), or (b) privileged and confidential, as that phrase is used in Section 11-35-410. For every document Consultant submits in response to or with regard to this solicitation, Consultant must separately mark with the words "TRADE SECRET" every page, or portion thereof, that Consultant contends contains a trade secret as that term is defined by the Trade Secrets Act. All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. If a portion of a bid or proposal is improperly marked as confidential or trade secret, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are protected, do not mark the entire page.

- c. CONSENT TO RELEASE: By submitting a SOQ, Consultant (1) consents to the release of documents governed by section 11-35-1810 unless Consultant conspicuously states otherwise on the cover of its bid or proposal, (2) agrees to the public disclosure of any documents regarding this solicitation submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a SOQ, documents submitted to clarify either a SOQ, and documents submitted during negotiations), unless the document is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL", (3) agrees that any information not marked, as required by these bidding instructions, as a "TRADE SECRET" is not a trade secret as defined by the Trade Secrets Act, and (4) that, notwithstanding any claims or markings otherwise, any information used to determine the award are subject to public disclosure. By submitting a SOQ, Consultant agrees to defend, indemnify and hold harmless the State of South Carolina, its officers and employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney's fees, arising out of or resulting from the State withholding information that Consultant marked as "CONFIDENTIAL" or "TRADE SECRET".

- 10.0 RIGHT OF NON/COMMITMENT OR REJECTION: This solicitation does not commit Beaufort County to award a contract, to pay any costs incurred in the preparation of a SOQ, or to procure or contract for the articles of goods or services. Beaufort County reserves the right to accept or reject any or all SOQ received as a result of this request, or to cancel in part or in its entirety this

request if it is in the best interest of the State to do so.

- 11.0 RIGHT TO PROTEST: Any Consultant desiring to exercise rights under Section 11-35-4210 (Right to Protest) of the South Carolina Consolidated Procurement code should direct all correspondence to David Thomas, CPPO, Director of Purchasing, Beaufort County, P.O. Drawer 1228, Beaufort, SC 29901-1228.
- 12.0 COST: Hourly rates and direct cost information submitted with SOQ shall be firm for a period of at least 90 days from the closing date.
- 13.0 UNSUCCESSFUL CONSULTANTS: Consultants not awarded a contract under this solicitation, may request return of their SOQ within thirty (30) days after notification of award is mailed. All cost of returns will be paid by the Consultant. If Federal Express, UPS, or other shipping number is not received with request, all materials will be destroyed.
- 14.0 DISCUSSION WITH RESPONSIVE CONSULTANTS: Discussions may be conducted with responsive Consultants who submit SOQ for the purpose of clarification to assure full understanding of the requirements of the request for proposals. All Consultants, whose SOQ, in the procuring agency's sole judgment, needing clarification shall be accorded such an opportunity.
- 15.0 PAYMENT FOR GOODS & SERVICES: Payment for goods & services received by Beaufort County shall be processed in accordance with Section 11-35-45 of the South Carolina Procurement Code.
- 16.0 TAXES: Do not include any taxes in the proposed rates shown that Beaufort County may be required to pay. Upon submission of a proposal by a state agency, the procurement officer will compute a 6% sales/use tax to the non-state agency proposals when applicable (service/labor excluded) in determining the cost. This procedure is necessary in accordance with the SC Department of Revenue regulation 117-174-95.

SECTION VI

PROPOSAL SUBMISSION INSTRUCTIONS

1. **One (1) clearly identified original and five (5) copies of your Statement of Qualifications (SOQ) are required.**
2. Qualification Statements will be received by the Beaufort County Purchasing Department until 3:00 p.m. on the closing date shown.
3. Qualification Statements are to be mailed to:

Beaufort County Purchasing Department
P. O. Drawer 1228
Beaufort, SC 29901-1228
4. Hand deliver and/or Express mail to:

Beaufort County Purchasing Department
106 Industrial Village Road, Building # 2
Beaufort, SC 29906-4291
5. The submitting Consultant is required to have printed on the envelope or wrapping containing his proposal the RFQ number, closing date, and title.
6. Consultants who desire to receive a copy of the Statement of Award must include a self-addressed stamped envelope.
7. Prohibition of Gratuities: It shall be unethical for any person to offer, or give, or agree to give any County employee or former County employee, or for any County employee or former County employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore.
8. Questions
 - a. Email questions you have, at least fourteen (14) calendar days prior to proposal closing date to:
 - b. E-Mail Dave Thomas at dthomas@bcgov.net, 843-255-2353.
 - c. Answers to questions received that would change and/or clarify this

solicitation will be provided be posted on the County's website at www.bcgov.net, 'Current Bid Opportunities' page as addendum.

- d. **Selection Committee members SHALL NOT be contacted during the RFQ process.**

SECTION VII

SUBMISSION REQUIREMENTS

1. To be considered for award, all SOQ must include, as a minimum, the following information. **All information should be presented in the listed order be on recycled content paper using double-side printing.**
2. **Executive Summary:** The Executive Summary should highlight the contents of the Technical Proposal and provide a broad understanding of the background of the objectives of the project, the requirements of the RFQ, the Scope of Work, contents of the SOQ and any related issues needing to be addressed.
3. **Work Plan:** Not applicable for this RFQ.
4. **Project Organization and Management:** The proposal shall demonstrate the capability to successfully manage and complete the contract. Include an outline of the methodologies to be used, along with a project management plan. Outcome measures specific to the proposed project should be clearly defined.
5. **Experience and Qualifications of the Consultant:** Qualifications of the Consultant and any sub-consultants should be included in the SOQ. A minimum of two (2) references must be provided, including a telephone number and contact person familiar with the Consultant's work. An organizational chart, including any sub-consultants, is required and should include each individual assigned to the project team.
6. **Eligibility:** Prior to executing a contract, Consultant must be an incorporated entity with a federal identification number and have a Beaufort County, SC business license.
7. **Personnel Capability:** The SOQ shall identify the staff person(s) to be assigned, and include a resume for each team member shown on the organizational chart detailing the qualifications, education, and experience of that person. Consultant should demonstrate the capacity to perform by listing workload and availability of staff listed in the SOQ.
8. **FEES:** All rates and reimbursable amounts should reflect the total unit costs to the County for the services required and should be included in the Price Proposal by Consultant. All price submittals shall be in a separate, sealed envelope

contained within the SOQ. Pricing information will not be used to evaluate Consultant(s) and used only after award has been made and contract negotiations are pending.

SECTION VIII

AWARD CRITERIA

Beaufort will use the following criteria, listed in order of importance, in ranking and selecting the firm, based upon the submitted SOQ: (maximum 100 points)

1. Demonstrated experience with stormwater management plans, both regulatory and technical. (25 points)
2. Working knowledge of computer based water quantity and water quality models. (20 points)
3. Experience with MS4 Stormwater program elements for South Carolina municipal clients. (15 points)
4. Capacity to perform. (15 points)
5. Location and knowledge of locality of the project. (15 points)
6. Demonstrated ability to facilitate collaborative efforts. (10 points)

SELECTION COMMITTEE

The committee is comprised of the members of the Beaufort County Stormwater Implementation Committee (SWIC) as follows:

Stormwater Manager or designee for:
Beaufort County
Town of Hilton Head Island
Town of Bluffton
Town of Port Royal
City of Beaufort



Beaufort County
Purchasing Department

Exhibit A: Offer Form

Statement of Qualifications Title: _____

RFQ Notice Number: _____

The undersigned on behalf of the entity, firm, company, partnership, or other legal entity listed below offers on its behalf to Beaufort County a SOQ that contains all terms, conditions, specifications and amendments in the Request for Qualifications (RFQ) issued by the County listed above. Any exception to the terms contained in the RFQ must be specifically indicated in writing and are subject to the approval of the County prior to acceptance. The signature below certifies your understanding and compliance with the terms and conditions contained in this RFQ.

Consultant (Firm) Name: _____

Federal Tax ID Number: _____

Mailing Address: _____

City, State, Zip Code: _____

Telephone Number: () _____

Fax Number: () _____

E-Mail Address: _____

Authorized Signature

Printed Name and Title

Date

PROPOSAL AND CERTIFICATION

RFQ NO. _____

PAGE _____ of _____

The undersigned _____, having carefully examined the
(Name of Consultant / Firm)
information contained in the Beaufort County RFQ Number # _____
dated _____, 2015, proposes to provide engineering and consulting
services to Beaufort County Government, as outlined in this SOQ.

In compliance with the Request for Qualifications # _____, and subject to all
conditions thereof, the undersigned agrees:

- (a) This SOQ, as stated, is open for acceptance for a period of 90 calendar days from the date of opening; and
- (b) To furnish all services, materials, and equipment necessary and incidental to perform the subject services.

CERTIFICATION

State whether or not your company has been involved in any litigation within the past five (5) years, arising out of your performance by indicating

___YES OR ___NO

(If you indicated "YES", explain fully in a separate attachment)

HAS A FEDERAL AGENCY OR A FEDERALLY CERTIFIED STATE OR LOCAL AGENCY PERFORMED ANY REVIEW OF YOUR ACCOUNTS OR RECORDS IN CONNECTION WITH ANY GRANT OR CONTRACT WITHIN ANY GRANT OR CONTRACT WITHIN THE PAST TWELVE MONTHS?

___YES OR ___NO

(IF "YES" GIVE NAME, ADDRESS, AND TELEPHONE NUMBER OF REVIEWING OFFICE IN A SEPARATE ATTACHMENT)

RFQ NO. _____

EXHIBIT B (2 of 3)

PAGE _____ of _____

This SOQ is submitted for use in connection with and in response to Beaufort County RFQ # _____. This is to certify, to the best of my knowledge and belief, that the information summarized herein are complete, current, and accurate as of _____, 2015, and that a financial accounting capability exists to fully and accurately account for the financial transactions under this project.

This SOQ is made without prior understanding, agreement, or connections with any corporation, firm, or person submitting a SOQ for the same service and is in all respect fair and without collusion or fraud. I agree to abide by all conditions of this RFQ and certify that I am authorized to sign this SOQ.

Signature of Consultant's Representative authorized to enter into contract with Beaufort County Council:

FIRM NAME: _____

BY: _____ DATE: _____
(Signature)

TYPE/PRINT: _____
(Name) (Title)

ADDRESS: _____
(Street Address and/or P. O. Box Number)

(City) (State) (Zip Code)

PHONE: () _____ FAX: () _____
(Area Code) Phone Number (Area Code) Fax Number

EMAIL: _____

FEDERAL ID#: _____ S.C. TAX #: _____

RFQ NO. _____

EXHIBIT B (3 of 3)

PAGE _____ of _____

IS YOUR FIRM: 1.SOLE PROPRIETORSHIP _____ YES _____ NO
 2.PARTNERSHIP _____ YES _____ NO
 3.CORPORATION _____ YES _____ NO

IF COMPANY IS A SOLE PROPRIETORSHIP, LIST THE OWNER'S FULL LEGAL NAME:

IF COMPANY IS A PARTNERSHIP, LIST THE PARTNERS' FULL LEGAL NAMES:

IF COMPANY IS A CORPORATION, LIST THE FULL LEGAL NAME, AS LISTED ON THE CORPORATE CHARTER:

IS THIS FIRM A MINORITY, OR WOMAN-OWNED BUSINESS ENTERPRISE?

_____ YES _____ NO IF YES, SPECIFY: _____ MBE _____ WBE

HAS THIS FIRM BEEN CERTIFIED AS A MINORITY/WOMAN-OWNED BUSINESS ENTERPRISE BY ANY GOVERNMENTAL AGENCY? _____ YES _____ NO

IF YES, SPECIFY GOVERNMENTAL AGENCY: _____

DATE OF CERTIFICATION: _____

EXHIBIT C

COUNTY COUNCIL OF BEAUFORT COUNTY Title VI Statement to Prime Consultants, Sub-consultants, Architects, Engineers, and Consultants



It is the policy of the County Council of Beaufort County, South Carolina, hereafter referred to as “Beaufort County” or “the County”, to comply with Title VI of the 1964 Civil Rights Act (Title VI) and its related statutes. To this end, Beaufort County gives notice to all Prime Consultants, Sub-consultants, Architects, Engineers, and Consultants that the County assures full compliance with Title VI and its related statutes in all programs, activities, and contracts. It is the policy of Beaufort County that no person shall be excluded from participation in, denied the benefit of, or subjected to discrimination under any of its programs, activities, or contracts on the basis of race, color, national origin, age, sex, disability, religion, or language regardless of whether those programs and activities are Federally funded or not.

Pursuant to Title VI requirements, any entity that enters into a contract with Beaufort County including, but not limited to Prime Consultants, Sub-consultants, Architects, Engineers, and Consultants, may not discriminate on the basis of race, color, national origin, age, sex, disability, religion, or language in their selection and retention of first-tier sub-consultants, and first-tier sub-consultants may not discriminate in their election and retention of second-tier sub-consultants, including those who supply materials and/or lease equipment. Further, Consultants may not discriminate in their employment practices in connection with highway construction projects or other projects assisted by the U.S. Department of Transportation (USDOT) and/or the Federal Highway Administration (FHWA).

In all solicitations either by competitive bidding or negotiation made by the Consultant for work to Beaufort County to be performed under a subcontract, including procurements of materials or leases of equipment, each potential sub-consultant or supplier shall be notified by the Consultant of the Consultant's obligations under the contract and the Title VI regulations relative to nondiscrimination on the basis of race, color, national origin, age, sex, disability, religion, or language by providing such a statement in its bidding and contract documents.

Upon request, the Consultant shall provide all information and reports required by Title VI requirements issued pursuant thereto, and shall permit access to its books, records, accounts and other sources of information, and its facilities as may be determined by Beaufort County, USDOT, and/or FHWA to be pertinent to ascertain compliance with such regulations, orders, and instructions. Where any information required of a Consultant is in the exclusive possession of another who fails or refuses to furnish this information, the Consultant shall so certify to USDOT or FHWA, as appropriate and via Beaufort County, and shall set forth what efforts it has made to obtain the information. In the event of the Consultant's non-compliance with nondiscrimination provisions of this contract, USDOT may impose such contract sanctions as it or FHWA may determine to be appropriate, including, but not limited to:

- Withholding of payments to the Consultant under the contract until the Consultant complies, and/or
- Cancellation, termination, or suspension of the contract, in whole or in part.

In the event a Consultant becomes involved in, or is threatened with, litigation with a sub-consultant or supplier as a result of this direction to comply with Title VI, the Consultant may request USDOT to enter into such litigation to protect the interests of USDOT and FHWA. Additionally, the Consultant may request the United States to enter into such litigation to protect the interests of the United States.

Any person or sub-consultant who believes that they have been subjected to an unlawful discriminatory practice under Title VI has a right to file a formal complaint within one hundred eighty (180) days following the alleged discriminatory action. Any such complaint must be filed in writing or in person:

**Beaufort County Compliance Department
Post Office Drawer 1228 · Beaufort, SC 29901-1228
843.255.2354 Telephone · 843.255.9437 Facsimile
E-mail: compliance@bcgov.net**

EXHIBIT D

EVALUATION FORM

DATE: _____

REVIEWER'S NAME/TITLE: _____

FIRM NAME & RFQ No: _____ # _____

(REFER TO 'AWARD CRITERIA' p.19)

No.	CRITERIA	POINTS POSSIBLE	POINTS SCORED
1	Demonstrated experience with stormwater management plans, both regulatory and technical.	25	
2	Working knowledge of computer based water quantity and water quality models.	20	
3	Experience with MS4 Stormwater program elements for South Carolina municipal clients.	15	
4	Capacity to perform.	15	
6	Location and knowledge of locality of the project.	15	
7	Demonstrated ability to facilitate collaborative efforts.	10	
		TOTAL POINTS	

EXHIBIT E

SAMPLE CONTRACT (To be completed and provided by Consultant after successful award of the project)

CONTRACT

THIS CONTRACT is made this _____, 2015, by and between Beaufort County, a political subdivision of the State of South Carolina (hereinafter referred to as "County") and XXXXX. (hereinafter referred to as "Consultant"). This Contract shall consist, by reference of all the terms, conditions, scope of work, specifications and provisions contained in RFQ Number XXXXXX dated XXXXXX (advertised in The Island Packet/Beaufort Gazette on XXXXX, all Addendums and Consultant's Statement of Qualifications dated XXXXXX, 2015.

WITNESSETH:

WHEREAS, the Consultant and the County desire to enter into this contract relating to XXXXXXXXXXXXXXXX subject to the terms, specifications, conditions and provisions of the request for qualifications as heretofore mentioned.

NOW, THEREFORE, the Consultant and the County agree to all of these terms, conditions, specifications, provisions and the special provisions as listed below:

- A. This Contract is deemed to be under and shall be governed by and construed according to the laws of the State of South Carolina.
- B. Any litigation arising out of this Contract shall be held only in a circuit court of Beaufort County, Beaufort, South Carolina in the Fourteenth Judicial Circuit.
- C. The Consultant shall not sublet, assign, nor by means of a stock transfer sale of its business, assign or transfer this Contract without the written consent of the County.
- D. This Contract, including the terms, conditions, specifications and provisions listed herein makes up the entire contract between the Consultant and County. No other Contract, oral or otherwise, regarding the subject matter of this Contract shall be deemed to exist or bind either party hereto.
- E. It is understood that this Contract shall be considered exclusive between the parties.
- F. Any provisions of this Contract found to be prohibited by law shall be ineffective, to the extent of such prohibition, without invalidating the remainder of this Contract.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties agree as follows:

**ARTICLE 1
BACKGROUND/SCOPE OF WORK**

Background

The Consultant does hereby offer to the County services for the purpose of providing [brief description of work] as contained and described in the Scope of Work.

Scope of Work

[Insert Scope of Work here]

**ARTICLE 2
LIABILITY**

The County and Consultant shall not be responsible to each other for any incidental, indirect or consequential damages incurred by either Consultant or County or for which either party may be liable to any third party which damages have been or are occasioned by services performed or reports prepared or other work performed hereunder.

**ARTICLE 3
INDEMNIFICATION AND HOLD HARMLESS**

The Consultant does hereby agree to indemnify and save harmless the County, its officers, agents and employees from and against any and all liability, claims, demands, damages, fines, fees, expenses, penalties, suits, proceedings, actions and cost of actions, including attorney's fees for trial and on appeal of any kind and nature to the extent arising or growing out of or in any way connected with the negligent performance of the Contract, by Consultant, its agents, servants or employees.

**ARTICLE 4
ASSIGNMENT**

Consultant shall not assign any rights or duties of the professional services contract without the expressed written consent of the County. Any assignment or subletting without the written consent of County shall be void and this Contract shall terminate at the option of the County.

**ARTICLE 5
PERFORMANCE PERIOD/TERM**

The term of this Contract shall be for a period of (determined by negotiated schedule of work) starting on _____, 2015 and ending on _____, 2016. At the County's option, this contract may be extended.

ARTICLE 6

COMPENSATION

Total annual compensation is not to exceed _____ dollars (\$XXXX.XX), billed at unit rates provided in the SOQ and invoiced monthly.

ARTICLE 7 INSURANCE/PERFORMANCE BOND

Insurance

Consultant does hereby covenant, agree and hereby represent to the County that it has obtained workmen's compensation insurance, general liability and automobile liability insurance, as well as providing coverage against potential liability arising from and in any manner relating to the Consultant's use or occupation of the premises during the course of performing the contracted services, all in accordance with and as **specified** in the County's RFQ Number XXXXX,. **Additionally, the Consultant agrees to list the County as 'additional insured' on Certificates of Insurance related to the execution of this Contract.**

Performance Bond

No performance bond is required for this contract.

ARTICLE 8 DEFAULT/TERMINATION

Default

In the event of default or breach of any condition of this Contract resulting in litigation, the prevailing party would be entitled to reasonable attorneys' fees fixed by the Court. The remedies herein given to County under Default shall be cumulative, and the exercise of any one remedy by the County shall not be to the exclusion of any other remedy.

Termination

This contract may be terminated by the County,' 'for convenience' 'for cause,' or by 'by mutual consent' as described in RFQ number XXXX.

1. Termination for Convenience

The County may, without cause, terminate this contract in whole or in part at any time for its convenience. In such instance, an adjustment shall be made to the Consultant, for the reasonable costs of the work performed through the date of termination. Termination costs do not include lost profits, consequential damages, delay damages, unabsorbed or under absorbed overhead of the Consultant or its sub-consultants, and/or failure of Consultant to include termination for convenience clause into its subcontracts and material purchase orders shall not expose the County to liability for lost profits in conjunction with a termination for convenience settlement or equitable adjustment. Consultant expressly waives any damages, delay damages, or indirect costs which may arise from County's election to terminate this contract in whole or in part for its convenience.

2. Termination For Cause

Termination by the County for cause, default, or negligence on the part of the Consultant shall be excluded from the foregoing provisions. Termination costs, if any, shall not apply. The ten (10) days advance notice requirement is waived, and the default provision in this bid shall apply.

Reasons for Termination for Cause shall include but not limited to:

- a) Default as defined above,
- b) failing to make satisfactory progress in the prosecution of the contract
- c) endangering the performance of this contract
- d) criminal activity or misconduct,
- e) work that is deemed sub-standard by the County Representative.

3. Termination by Mutual Consent

Either party may terminate this Contract by mutual consent with written notice attesting and agreeing to a termination by mutual consent by either party. Upon such termination, the County shall pay the Consultant for all services performed hereunder up through the date of such termination. Termination by mutual consent may entitle the Consultant to reasonable costs allocable to the contract for work or costs incurred by the Consultant up to the date of termination. The Consultant must not be paid compensation as a result of a termination by mutual consent that exceeds the amount encumbered to pay for work to be performed under the contract.

ARTICLE 9 RESPONSIBILITY

The County will be responsible to provide the Consultant reasonable access to County locations when necessary, ensure cooperation of County employees in activities reasonable and appropriate under the project, and obtain authorization for access to third party sites, if required.

ARTICLE 10 FORCE MAJEURE

Should performance of Consultant services be materially affected by causes beyond its reasonable control, a *Force Majeure* results. *Force Majeure* includes, but is not restricted to:

- a) acts of God,
- b) acts of a legislative,
- c) administrative or judicial entity,
- d) acts of Consultants (other than sub-consultants of Consultant),
- e) fires,
- f) floods,
- g) labor disturbances,
- h) civil unrest
- i) incorrect/inferior parts or materials
- j) terrorism

k) unusually severe weather.

Consultant will be granted a time extension and the parties will negotiate an adjustment to the fee, where appropriate, based upon the effect of the Force Majeure upon Consultant's performance.

**ARTICLE 11
SEVERABILITY**

Every term or provision of this Contract is severable from others. Notwithstanding any possible future finding by a duly constituted authority that a particular term or provision is invalid, void, or unenforceable, this Contract has been made with the clear intention that the validity and enforceability of the remaining parts, terms and provisions shall not be affected thereby.

**ARTICLE 12
INDEPENDENT CONSULTANT**

The Consultant shall be fully independent in performing the services and shall not act as an agent or employee of the County. As such, the Consultant shall be solely responsible for its employees, sub-consultants, and agents and for their compensation, benefits, contributions and taxes, if any.

**ARTICLE 13
NOTICE**

The Consultant and the County shall notify each other of service of any notice of violation of any law, regulation, permit or license relating to the services; initiation of any proceedings to revoke any permits or licenses which relate to such services; revocation of any permits, licenses or other governmental authorizations relating to such services; or commencement of any litigation that could affect such services. Such notice shall be delivered by U.S. mail with proper postage affixed thereto and addressed as follows:

County:	Beaufort County Administrator P. O. Drawer 1228 Beaufort, SC 29901-1228 Beaufort County Attn: Beaufort County Purchasing Director P. O. Drawer 1228 Beaufort, SC 29901-1228
Consultant:	XXXXXXXX

**ARTICLE 14
CHANGE ORDERS**

No change orders are applicable under this contract.

**ARTICLE 15
AUDITING**

The Consultant shall make available to the County if requested, true and complete records, which support billing statements, reports, performance indices, and all other related documentation. The County's authorized representatives shall have access during reasonable hours to all records, which are deemed appropriate to auditing billing statements, reports, performance indices, and all other related documentation. The Consultant agrees that it will keep and preserve for at least seven years all documents related to the Contract, which are routinely prepared, collected or compiled by the Consultant during the performance of this contract.

The County's Auditor and the Auditor's authorized representatives shall have the right at any time to audit all of the related documentation. The Consultant shall make all documentation available for examination at the Auditor's request at either the Auditor or Consultant's office and without expense to the County.

**ARTICLE 16
GRATUITIES**

The right of the Consultant to proceed or otherwise perform this Contract, and this Contract may be terminated if the County Manager and/or the County Contracting Manager determine, in their sole discretion, that the Consultant or any officer, employee, agent, or other representative whatsoever, of the Consultant offered or gave a gift or hospitality to a County officer, employee, agent or Consultant for the purpose of influencing any decision to grant a County Contract or to obtain favorable treatment under any County Contract.

The terms "hospitality" and "gift" include, but are not limited to, any payment, subscription, advance, forbearance, acceptance, rendering or deposit of money, services, or items of value given or offered, including but not limited to food, lodging, transportation, recreation or entertainment, token or award.

**ARTICLE 17
INVOICES**

All invoices for work done under this contract should be directed to the County Representative, XXXXX
Located at:

XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX
Beaufort, SC

Invoices should include:

- a) Period of time covered by the invoice
- b) Detail of work performed

- c) Purchase order and Contract Number
- d) Tax Identification Number

Unless otherwise indicated, all invoices must be timely and accurate, and received within XXX days of completion. The County may assess late penalties for late invoicing and/or inaccurate invoices.

ARTICLE 18 Purchase Orders

The County will issue Purchase Orders from properly executed requisitions. The County shall not be responsible for invoices of \$500 or more that do not have a purchase order covering them.

ARTICLE 19 ORDER OF DOCUMENTS

The following are incorporated into and made a part of this contract by reference:

- a) Request for Qualifications Number XXXXX
- b) General Terms and Conditions between County and Consultant.
- c) Insurance Requirements
- d) XXXXXXXXXX SOQ Submission to RFQ Number XXXXX
- e) Notice of Award Letter dated XXXXX.
- f) Recommendation Letter dated XXXXXX

SIGNATURE PAGE

This Contract with the above Articles constitutes the entire contract between the parties hereto. No representations, warranties or promises pertaining to this Contract have been made or shall be binding upon any of the parties, except as expressly stated herein.

This Contract shall be construed in accordance and governed by the laws of the State of South Carolina.

IN WITNESS WHEREOF, the parties hereto have executed this Contract on the day and year first above written.

WITNESSES:

BEAUFORT COUNTY, a political sub-division of the State of South Carolina

By: _____
Name: Gary Kubic
Title: County Administrator
Address: P.O. Drawer 1228
Beaufort, SC 29901-1228
Phone: (843) 255-2026
Fax: (843) 255-9403
Date: _____

WITNESSES:

CONSULTANT NAME

By: _____
Name: _____
Title: _____
Address: _____
Phone: _____
Fax: _____
Tax ID Number: _____
Date: _____



**COUNTY COUNCIL OF BEAUFORT COUNTY
PURCHASING DEPARTMENT**

106 Industrial Village Road, Bldg 2, Post Office Drawer 1228
Beaufort, South Carolina 29901-1228

David L. Thomas, Purchasing Director
dthomas@bcgov.net, 843.255.2353

TO: All Prospective Vendors
DATE: June 23, 2015

**ADDENDUM 1
Engineering and Consulting Services for 2015 Beaufort County
Stormwater Management Implementation Guide
RFQ 07022015**

The following information will amend, modify, and/or clarify the proposal documents described above and are hereby part of the same. Please incorporate these items into the solicitation documents for the above-referenced project. Please acknowledge receipt of this addendum on the solicitation form.

- 1) Has a time period been established for this contract? No. Negotiated as part of contract
- 2) Has a level of effort (estimated hours) been established for this contract? No. Negotiated as part of contract
- 3) Are you looking for respondents to provide details on their proposed approach to the scope of services, and if so should we provide those details under Item 4 of our submission (since Item 3 is not applicable to this RFQ)? You can give us your approach as part of the executive summary in item 1. You can use item 3 if you wish to separate the scope of work. The format will not be held so rigid as to disqualify anyone for providing additional information within the SOQ.
- 4) I wanted to confirm that the price proposal should only include rates and other unit costs, as opposed to a total cost for the scope of services. Is this correct? Yes
- 5) Is there any required format for the Price Proposal? No. Just make sure to include the hourly rate of all staff to be working on the project and the unit cost or reimbursable rate for any direct expenses such as travel, copies, postage, meals, etc. that are anticipated during the project.

Sincerely,

David L. Thomas, CPPO
Beaufort County Purchasing Director



QUALIFICATIONS TO BEAUFORT COUNTY

FOR ENGINEERING AND CONSULTING SERVICES FOR 2015 BEAUFORT COUNTY STORMWATER MANAGEMENT IMPLEMENTATION GUIDE

RFQ 07022015

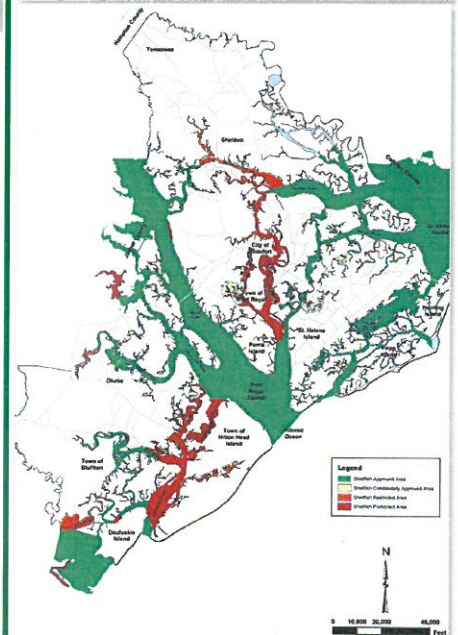
SUBMITTED BY:



IN ASSOCIATION WITH



JULY 2, 2015 | 3:00 P.M.





12 Richland Drive
Bluffton, SC 29909
(843) 290-0980
www.appliedtm.com

July 1, 2015

Beaufort County Purchasing Department
Dave Thomas, Purchasing Director
106 Industrial Village Rd., Bldg #2
Beaufort, SC 29906-4291

Re: Engineering and Consulting Services for 2015 Stormwater Management Implementation Guide
RFQ 07022015

Dear Mr. Thomas:

We appreciate the opportunity to provide our response to Beaufort County's Request for Qualifications for Engineering and Consulting Services for updates to the County's 2006 Stormwater Management Plan. With more than 27 years of experience in the stormwater field in Beaufort County, ATM will lead the team and will work closely with our partner firm, Horsley Whitten to achieve all of the scope of work items listed in the RFQ.

Our team's local and nationally experienced staff and relationships in the public arena set us apart from firms that focus more of their engineering business on private work for the development community. As a result, we more clearly understand the challenges that local governments face and the difficult regulatory and environmental decisions that they must make. To further our commitment to Beaufort County and to ensure our full efforts go toward support of the County, **if selected, ATM will agree not to offer any stormwater design or planning expertise to private sector clients within the County unless the County specifically asks or approves for ATM to provide services to the private sector in Beaufort County.**

As you review our proposal, feel free to contact me should you have any questions or require any additional information. This proposal is firm for a period of at least 90 days from the closing date for submission of the SOQ.

We look forward to the opportunity of continuing our services to Beaufort County with its stormwater management. You may contact me as follows:

Edward Modzelewski, Chairman
Applied Technology & Management, Inc.
843-290-0980 (mobile)
Emodzelewski@appliedtm.com

Sincerely,


Edward Modzelewski Chairman

Coastal, Environmental, Marine and Water Resources Engineers

1. Executive Summary

Management

Qualifications

Community

Capability

0. Fees

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- 3| EXPERIENCE AND QUALIFICATIONS - REFERENCES
- 4| ELIGIBILITY
- 5| PERSONNEL CAPABILITY
- 6| FEES
- 7| REQUIRED FORMS

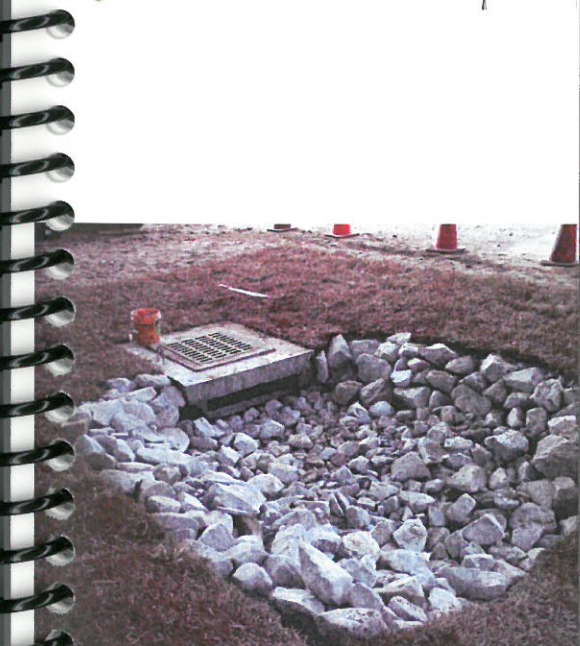
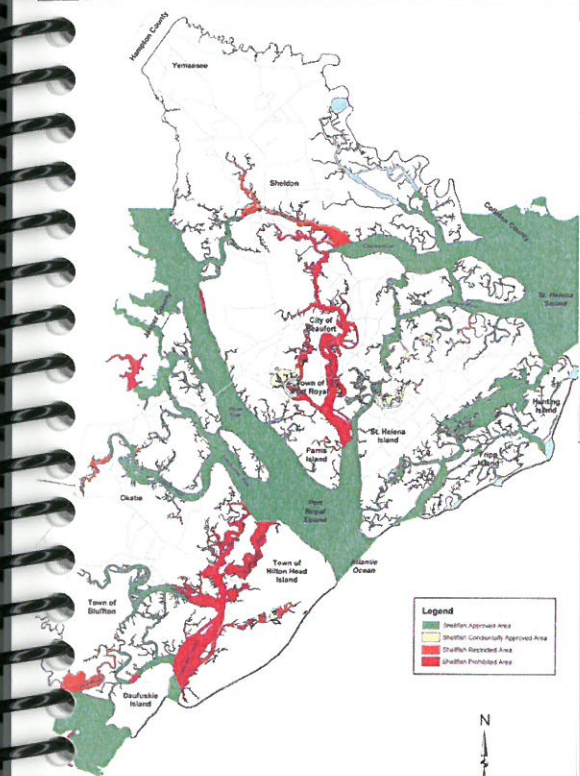
QUALIFICATIONS FOR

ENGINEERING AND CONSULTING SERVICES FOR 2015 STORMWATER MANAGEMENT IMPLEMENTATION GUIDE RFQ 07022015

BEAUFORT COUNTY, SC
July 2, 2015



APPLIED TECHNOLOGY & MANAGEMENT, INC.
12 RICHLAND DRIVE | BLUFFTON | SOUTH CAROLINA 29909
843-290-0980 | WWW.APPLIEDTM.COM



1. Executive Summary

Management

Qualifications

Capability

Feasibility

6. Fees



1 | EXECUTIVE SUMMARY

Beaufort County has been a recognized leader in stormwater management for addressing water quality impacts that have occurred as a result of rapid growth in the County. The County established a Stormwater Utility in 2002 and modified the Stormwater Utility enacting ordinances in 2006 with the goal of developing a comprehensive and coordinated program for identifying and implementing stormwater-related development controls within the County, as well as in local municipal jurisdictions. Beaufort County is unique in that it has recently developed a strong water quality protection policy through the development and adoption of Volume Control Ordinances and implementation procedures. Though many aspects of this vision have been achieved, the County Stormwater Management Program (Stormwater Program) desires to execute several new innovative initiatives to restore water quality in certain sensitive watersheds while also addressing the requirements of the State Mandated MS4 Program.

The County Stormwater Manager has formalized, as part of the countywide intergovernmental Stormwater Implementation Committee (SWIC), some of the goals originally identified in the formation of the Stormwater Utility. These include the following:

- Strengthening the relationships between the municipalities and County to improve coordination of complementing stormwater management programs for efficient and cost-effective execution of stormwater controls. The SWIC process is key to maintaining sound technical input from each member
- Upgrading and Implementing a more aggressive Public Education and Outreach program to reach the various sectors of the Beaufort County community to include residents, business leaders, POA leaders, educators and research professionals. The current countywide program performed by the Beaufort County Soil and Water Conservation District (BCSWCD) is advancing towards this goal
- Updating the County's progress toward advancing stormwater retrofit projects by introducing volume controls and advanced BMPs as guided by the County's Stormwater Volume Control Ordinance, as well as modification of the Ordinance implementation for consistency. The County continues to struggle with developing the projects outlined in the 2006 Stormwater Management Plan (SMP). The work proposed in the Request for Qualifications is aimed at updating the 2006 plan to bring it in line with current ordinances such as the **Stormwater Volume Control Ordinance** which ATM helped develop a few years ago
- As the County is now designated as Phase II Small MS4 (MS4), the current Stormwater Program does not meet the guidelines and will need to be modified to meet the new regulatory requirements and maintain compliance. These regulations are very specific as to how stormwater management programs must be established and implemented



- The Stormwater Utility has accumulated funding for study, design and implementation of various capital projects (i.e. retrofit projects) to stimulate the growth and support of local capabilities within the framework of the Stormwater Program (such as establishing a DHEC certified Water Quality Testing and Sampling Laboratory at USCB). However, to meet all the stormwater needs the County currently has in its Stormwater Capital Improvement Plan, additional revenues will have to be identified and an updated SMP will need to be developed so project needs and funding sources can be properly coordinated.
- Over the years, the Stormwater Utility has undertaken many scientific and water quality monitoring projects in close coordination with scientific experts and agencies to build a database and to understand existing environmental conditions. The Stormwater Utility now wants to formulate solutions to improve local water quality and re-evaluate how scientific projects, data collection and analysis projects are defined, scoped and implemented, so that results are measurable and usable. The County has an excellent opportunity to use the expertise of many of the locally-based organizations such as USCB, TCL and the Lowcountry Institute to undertake supportive research projects that can have defined and measurable goals. The update of the 2006 SMP will lay the ground work for this process.

2.1 OUR APPROACH

In February 2006 the County completed the first overall SMP for Beaufort County. The study was carried out as the overall water quality of waterbodies in the County and its adjoining municipalities was being adversely impacted by rapid growth in many areas. In addition to water quality issues, the County was also experiencing numerous areas of flooding.

Up until 2006, stormwater management consisted of flood prevention management and focused primarily on moving stormwater away from roads and developments as rapidly as possible with minimal concerns for any impacts the rapid movement of stormwater had on the unique and sensitive estuarine environment that exists throughout the County. In the mid-1990's, the Clean Water Task Force began to study these impacts and to quantify stormwater runoff impacts on the estuary. In 2001, the County created the current Stormwater Utility to begin to address not only flooding issues but also current stormwater design practices and their impacts on the estuarine environment.

In 2006 the County began implementation of recommendations from the SMP Plan. The major recommendations of the 2006 SMP included:

- Establishment of a Level of Service (LOS) and Extent of Service (EOS) for both water quality and flood control
- Identification of areas where increases in the conveyance capacity of the Primary Stormwater Management System and/or stormwater retention was needed to control peak stormwater flow and flooding
- Implementation of a series of Stormwater Best Management Practices (BMPs) to provide treatment of stormwater prior to its discharge to the estuary
- Identification and creation where practicable of regional stormwater treatment facilities, especially in developed areas
- Implementation of development controls and inclusion of BMPs for all new land developments
- Creation of a GIS-based inventory of all stormwater conveyance systems in the County

Since 2006 the County has:

- Established the LOS and EOS for the County Stormwater Utility but will need to update these to match the updated SMP
- Developed a Capital Improvements Plan to implement findings of the 2006 SMP modeling efforts and made recommendations for both flooding and water quality improvement
- Created an in-depth and detailed Stormwater BMP manual for use with all development within the County
- Began key stormwater retrofit projects (e.g. Okatie West, County Services Center Parking Lot impervious area conversion)
- Implemented ordinances with the County ZDSO that require stormwater treatment and discharge systems to meet certain requirements
- Continued to build its inventory of existing stormwater conveyance systems

Since the 2006 SMP was implemented, the County has experienced continued growth in critical areas of the estuary and continued closure of shellfish harvesting areas. To address these issues the County has voluntarily developed and implemented new strict Stormwater Volume Control Regulations

In addition, the County has been issued new federally mandated regulations:

- Designation by SCDHEC as a Phase II Small MS4 community (MS4)
- Establishment of a TMDL on the Okatie River

All of these major changes as well as new and changing growth patterns related to development have resulted in the need to update the 2006 SMP.

One of the most far-reaching federal regulations the County is currently implementing is the new MS4 regulations. These regulations provide a specific timeline and requirements that the County must implement as part of its SMP. The MS4 regulations will change how the Stormwater Utilities in the region operate. Under the MS4 regulations, the County was required to submit to SCDHEC its Notice of Intent (NOI) for coverage under the SCDHEC General MS4 permit which ATM assisted the County with preparing and submitting to DHEC. The NOI outlines how the County will implement the following MS4 permit requirements:

- Public education program
- Public involvement program
- Sediment and erosion control for all public and private construction projects
- Illicit discharge and detection program
- Post-development stormwater system management
- Good housekeeping of public facilities

The MS4 regulations have the same goal the County has had since the mid 1990's; namely, water quality improvement. However, specific requirements of the MS4 have to be understood and integrated into the overall update to the SMP.

As the four municipalities in the County will eventually all be required to implement MS4 regulations and will be required to develop similar NOIs, a great opportunity exists for the County and the municipalities to collaborate on not only implementing MS4 requirements but also on developing a SMP and stormwater management regulations that complement each other. Currently, various examples of collaboration exist.

For example the City of Beaufort and the Town of Port Royal use the County's Stormwater BMP manual to regulate stormwater system design and water quality BMPs. Mostly all recognize and use a form of the County's Stormwater Volume Control Ordinance as well. However, the current SMP does not include many of these initiatives and needs to be updated to reflect such items.

To develop a successful update to the existing SMP, the County will have to successfully collaborate with the municipalities to maximize technical and personnel resources and to implement common stormwater BMP practices, stormwater ordinances and stormwater system design standards. If stormwater management requirements were uniform across the County, the attraction of less stringent stormwater standards in some municipalities and "jurisdiction shopping" at the expense of water quality could be eliminated.

The opportunities for collaboration are many and already exist. The County and municipalities already participate in a common Public Education and Involvement Program to meet these two Minimum Control Measures (MCMs) of the MS4 regulations. In addition, the County and municipalities have for a number of years jointly participated in the current water quality monitoring program. Additional areas of possible collaboration are:

- Development of uniform stormwater ordinances
- Development of uniform stormwater BMP manuals, design practices and plan review
- Shared resources for implementation of MS4 regulations
 - Stormwater project site inspections
 - IDDE program
 - MS4 yearly reporting requirements

A successful and implementable SMP should build on these successes. As the ATM team has unequalled expertise as well as long term positive working relationships with the County and municipalities, no team will be better suited to assist the County with the extensive amount of facilitation that will be needed between the County and municipalities with development of a uniform countywide SMP that will be accepted and implemented by all.

In summary, to properly update the 2006 SMP and to integrate the new requirements outlined above into the plan the following tasks will need to be successfully completed and agreed to by all entities. This should be a joint effort of the County and municipalities and may best be accomplished by allowing the ATM team to work through the existing Stormwater Implementation Committee (SWIC). The key elements the ATM team envisions assisting the County and municipalities with are:

- Perform an in-depth review of the 2006 SMP to identify areas needing updating
- Update growth area mapping throughout the County and municipalities to determine growth and infill areas since 2006
- Review hydraulic and water quality modeling performed in 2006 and update models in priority watersheds, focusing on watersheds with significant development and/or growth since 2006
- Investigate documented customer complaints to identify areas of concern
- Compare current findings against 2006 SMP findings, develop updated SMP and revised Capital Improvements Plan (CIP) for each entity
- Assist County Stormwater Utility staff in meetings with municipalities to continue the current efforts to collaborate towards development of common stormwater practices, regulations and design requirements
- Facilitate regional public meetings to gain citizen input on stormwater concerns and issues

- Provide an updated SMP that will set the path forward for stormwater management with the County and municipalities
- Assist with presentations of SMP updates and findings to County and municipal committees, board and/or councils and the public at large

2.2 OUR TEAM

Given the scope of the update of the SMP and our desire to bring national level expertise and experience to the County, ATM has joined forces with Horsley Whitten Group for this work. Horsley Whitten specializes in providing consulting services at a national level for stormwater planning and program support including: low impact development/green infrastructure design; master planning; performance monitoring; and technical information transfer and training.

The County is aware of ATM's expertise in innovative stormwater initiatives (such as development of the County Stormwater Volume Control Ordinance as well as the County's MS4 NOI) and by including specialized partner firms, we can meet all of the County's needs for technical as well as financial and operational requirements of the Stormwater Utility.

Between our two firms we have assembled a team of experienced engineering and management professionals capable of undertaking all aspects of the County's stormwater program management as well as providing the technical aspects of the program. In Section 5 of our response we have provided detailed information on ATM and Horsley Whitten (HW) professional staff that will be dedicated to this project. The key leaders of our team are Edward Modzelewski (ATM) who will fill the role as Project Director, Richard Claytor, PE (HW) and Anthony Maglione of ATM will provide Technical Assistance and Anne Kitchell of Horsley Whitten who will both provide technical support and input for the SMP update.

In addition, Both ATM and Horsley Whitten have significant experience working with MS4 jurisdictions, specifically on enhancing local programs, developing design standards and technical manuals and retrofitting to meet watershed and regulatory objectives. Several members of Horsley Whitten previously worked for the Center for Watershed Protection which is nationally recognized for development of innovative problem solving of watershed and related stormwater issues.

2.3 SUMMARY OF OVERALL TEAM EXPERIENCE

Our Team has led multiple stormwater projects, developed stormwater utilities, stormwater BMP manuals and ordinances for many local governments. In addition, we have developed and gained grants for many innovative stormwater projects (e.g. Town of Port Royal Septic Tank Evaluation Study - OCRM Grant).

ATM assisted Beaufort County in the development of the County's Stormwater Volume Control Ordinances and implementation which required ATM to work closely with County engineering, management, County Council and stormwater staff. ATM had the opportunity to assist with the education of and approval by County Council for the new ordinances associated with the volume control program and resolution of issues such as the 10% impervious coverage issues for the Gateway project near Bluffton. Our firm has established relationships with key Council Committees, the Stormwater Utility Board and County Council as well as with all of the municipalities. We are knowledgeable of the needs of each individual stormwater utility through our work on the current utility rate studies that ATM and Raftelis Financial Consultants are performing throughout the County.



The ATM team's stormwater and environmental experience extends beyond local to national and international. Team member, Steven Peene, Ph.D. has, for the past several years, worked for the Florida Department of Transportation (FDOT) as well as many Florida counties and municipalities in the area of TMDLs and water quality standards that have been implemented throughout Florida. Dr. Peene also sits on the Florida Stormwater Association board and is an active member of SESWA. His involvement in this work demonstrates not only our team's depth and extensive environmental and modeling experience, but also our team's ability to facilitate with regulators at all levels on behalf of our governmental clients. Combining our team's national experience with its strong local experience, our team will provide the County with the most experienced team to address complex combination of planning, design, regulatory requirements as well as facilitation and management support.

Horsley Whitten brings a strong working knowledge of Beaufort County's watersheds, development patterns, and stormwater program strengths and weaknesses. Ms. Anne Kitchell is a native South Carolinian and was a Beaufort resident prior to joining Horsley Whitten. Horsley Whitten also has professional relationships with marine and stormwater researchers and policy advocates from the University of South Carolina, Clemson University, SC DNR, NOAA, SC Sea Grant Consortium, and the Hollings Marine Lab.

All successful watershed and stormwater planning projects require collaboration, typically with regulatory agencies, local stakeholders and elected and appointed officials. As with ATM, Horsley Whitten has extensive experience with facilitating collaborative efforts including a long history of public participation, outreach, and planning projects that involve multiple agencies and/or jurisdictions, as well as use of technology to improve communications and input mechanisms. An example of this collaborative capacity is RhodeMap RI, a \$1.3 million grant-funded effort with the State of Rhode Island to collaborate on a statewide plan for sustainable development. Through a diverse set of partnerships, the Horsley Whitten team is leading development of the comprehensive, integrated plan through an inclusive public process with extensive community outreach and communication efforts in the form of public forums, design

charrette, public surveys, targeted outreach (e.g., watershed groups), web-page development, and social media campaigns.

In summary, the ATM team will bring to the County a team of professionals that has:

- An extensive working knowledge of the unique stormwater issues facing Beaufort County and its municipalities
- Excellent, long-standing and established working relationship with the County and the municipalities
- Individuals that will bring a wide array of national experience with planning, facilitating and developing the best solutions to stormwater management issues facing the County and municipalities
- A diverse team of engineers, scientists and experts with extensive utility management and finance experience
- Knowledge of the MS4 program and NOI process greater than any other firm in the area (as ATM assisted in developing both)
- The ability to quickly blend stormwater improvement needs and funding systems due to the financial models the ATM team has developed to analyze project needs vs. financial capabilities

A more comprehensive list of related ATM team project experience is presented in Section 3.

2.3 PROJECT MANAGEMENT

For the County and selected consultant to properly and effectively manage the scale of work efforts this contract requires, the successful engineering firm will need a highly experienced and knowledgeable Project Director who will work with and coordinate efforts between County staff and the consulting team staff. Locally based, Edward Modzelewski will fill this important leadership role for our Team and serve as lead point of contact. In his over 40 years of experience in coastal South Carolina, Mr. Modzelewski has:

- Developed some of the first and most long-term successful stormwater management plans in Beaufort County such as the Indian Hills development stormwater master plan
- Facilitated teams of professionals to solve complex environmental problems; from the development of stormwater ordinances and BMP design manuals to new and innovative stormwater concepts
- An excellent professional working relationship with County Stormwater staff, OCRM and DHEC stormwater management staff, and elected officials throughout the region.

2.5 SELECTION OF THE STORMWATER TEAM

In making the selection of a consulting engineering firm(s) to assist the County and municipalities with development of the updates to the 2006 SMP, the County will need to evaluate not only the offeror's engineering qualifications, but also its team and experience with utility management and operations, finance, ordinance development, regulatory compliance and interaction as well as its local knowledge and ability to successfully facilitate solutions as the update process is undertaken.

Our Team is best suited to provide stormwater services to Beaufort County as we:

- Have over 26-years of locally proven experience with facilitation and problem solving with both the County and municipal entities

- Are the only locally based team that has implemented a stormwater utility, developed stormwater ordinances and BMP manuals and developed one of the first MS4 programs in coastal South Carolina
- Are respected in both the private and public sector for our ability to build consensus to resolve difficult environmental issues
- Have the team with extensive knowledge of the history of the County's stormwater utility and local and hands-on experience working with Beaufort County and surrounding municipalities.
- Have innovative stormwater experience in Beaufort County and Coastal South Carolina as well as throughout the U.S. The Project Team has successfully completed over 100 stormwater projects in Beaufort County and the surrounding regions of the Lowcountry.
- Have assembled a team that can provide not only engineering services but can provide assistance with utility operations, cost accounting, and analysis and financing.
- Can provide an experienced Project Management team with extensive local, state and federal knowledge and experience.

If selected to provide stormwater services to the County, ATM will agree not to offer any of its stormwater design or planning expertise to private sector clients within the County unless the County specifically asks or approves for ATM to provide services to the private sector in Beaufort County.

A major differentiator between ATM and its competitors is that ATM does not provide services to private clients in locations where it provides its services to its public clients.
This avoids any implication of a conflict of interest.



2 | PROJECT ORGANIZATION AND MANAGEMENT

In Section 1, Executive Summary, we outlined our plan to accomplish the goals of the update of the 2006 Stormwater Management Plan. In this section we discuss the organizational structure we propose to use to do accomplish this. We will explain the management structure of the top tier leadership of our team and who will interact with the County engineering staff.

2.1 MANAGEMENT STRUCTURE

Our proposed overall project organization and management is outlined below, as are brief descriptions of the individuals who will provide the key leadership roles for this project. *Resumes* for all individuals and an *experience matrix* are provided in *Section 5 - Personnel Capabilities*.

2.2 OUR LEADERSHIP TEAM

Mr. Edward Modzelewski, Chairman of Applied Technology & Management will serve as the overall project director for the ATM - Horsley Whitten team. Mr. Modzelewski will also work closely with Mr. Anthony Maglione and Mr. Rich Claytor of Horsley Whitten. Mr. Modzelewski has over 38 years of environmental engineering and management experience and has been living and working in Beaufort County for the past 26 years. He will provide leadership of all public interface required of the project.

Mr. Modzelewski directed some of the early water quality oriented stormwater master plans in Beaufort County, including Eagles Point, Okatie Estates (now Oldfield) and Buckwalter Tract and was principal investigator for the Okatie Watershed Study under the SAMP Program and OCRM. He worked closely with Mr. Maglione and the Beaufort County Engineering, Stormwater Utility and Public works staff on the development of the first of its kind volume control ordinance passed by the County Council. He organized and assisted in the implementation of the *public outreach program* that accompanied the Ordinance work to include coordination with Bluffton, Scientific experts, state agencies, local plantation organizations and the greater island Committee of Hilton Head Island.



As a full time resident of Beaufort County, he will be available to meet local needs and coordination with the County Administrator, County Council and Stormwater Utility staff. Mr. Modzelewski will be the main point of contact with the County Stormwater Utility staff.

Mr. Modzelewski's responsibilities for this project will include:

- Serving as the County's main point of contact



2 | PROJECT ORGANIZATION AND MANAGEMENT

- Working with County engineering staff to define detailed work scopes, professional fees and project assignments
- Working within our team to assign work to the most qualified members of our team
- Overseeing project budgets, scope changes and overall project management
- Assigning ATM team members to assist the County Stormwater staff to facilitate meetings and discussions with municipalities, private stakeholders, advisory boards and committees and the general public as may be needed

Mr. Anthony Maglione, along with Mr. Claytor, will provide technical assistance to the entire ATM - Horsley Witten team. Mr. Maglione has 40 years of professional experience and has been a principal at ATM for 17 years. He will be available to participate in all facilitation with governmental agencies and private stakeholders as needed. He has worked on many local stormwater related projects such as:

- Stormwater Ordinance and BMP Manual Development and Bluffton Park Wetland Restoration - Town of Bluffton
- Wexford Plantation Stormwater Pump Station Planning - Hilton Head Island
- Stormwater Master Plan, Septic Tank Impact Study, Cypress Wetlands Stormwater Management System and various drainage projects and Intergovernmental Agreements (IGA) - Town of Port Royal
- Development of Stormwater Volume Control Ordinance – Beaufort County, SC

In addition, Mr. Maglione was program manager for ATM's multi-phase master stormwater planning and design contract with Georgetown County, SC, where he worked on many projects including working with Mr. Keith Reading on development and implementation of the County's stormwater utility, stormwater ordinances and BMP manual. He helped establish and facilitate the County's Stormwater Advisory Board as well as joint County Council and County Planning Commission meetings during development of the utility and stormwater ordinances. Mr. Maglione was also heavily involved in the development of DHEC's MS4 General Permit as an expert witness in the initial appeal of the first MS4 Phase II Permit promulgated by DHEC and a technical advisor to the legal team that worked to resolve the permit issues.

Prior to joining ATM, Mr. Maglione was director of design and construction for the Charleston Water System, where he was responsible for all aspects of engineering for the utility, planning, environmental permitting, funding and implementing of a \$300 million 10-year Capital Improvements Plan which involved a number of "first of a kind" subaqueous major water transmission main projects. He also facilitated and successfully completed contract negotiations with the Town of Sullivan's Island, Isle of Palms Water and Sewer Commission and the Mount Pleasant Water and Sewer Commission to provide nearly 6 mgd of wholesale potable water to these entities as a replacement for their underperforming artesian deep well water supply and Reverse Osmosis water treatment systems. His entire 38 years of experience have all been in coastal South Carolina for a wide array of environmental related projects.

As a result of his extensive knowledge and experience in Beaufort County and the surrounding counties, management expertise as a utility and engineering manager and extensive facilitation skills, Mr. Maglione can bring his many years of local experience to our team.

Rich Claytor, P.E., LEED AP will also fill the role as a technical advisor to the team. During his tenure at the Center for Watershed Protection, Mr. Claytor was able to develop a national level base of technical expertise and knowledge of innovative stormwater management tools that he will bring to our team. He

2 | PROJECT ORGANIZATION AND MANAGEMENT

will bring his 30 years of nationwide practical civil and stormwater engineering experience in water resource, stormwater planning, design, implementation and policy development to our team. Mr. Claytor has as wide array of experience in:

- Development of a number of stormwater manuals
- Authoring publications on stormwater policy, design and implementation
- Developing and conducting many stormwater training workshops, conferences and public meetings
- Over 25 years of experience with development of a wide array of stormwater management plans
- Development of strategies for watershed planning and management

Mr. Claytor's nationwide level of experience and expertise along with his extensive experience with development of state-of-the-art stormwater management planning, will lend itself to new and creative ideas on the key issues the stormwater management plan must address, development of goals to address key issues and development of a Stormwater Management Plan and Implementation Plan that will be innovative, comprehensive, practical and can be implemented by both the County and municipalities.

4.3 PROGRAM MANAGEMENT PLAN

Once a project is assigned by the County and a scope and professional fees are established and approved by the County, the project director will assign the project to the appropriate technical staff. Once work commences, specific reviews will be established with the County Stormwater staff prior to any public involvement or presentation to elected or appointed officials. .

Each of the professional areas will be led and managed by highly experienced and qualified engineers acting as team leaders. Once the specific work tasks are agreed upon and released by the County, each team leader will be assigned a specific project by the project director for which he will be responsible for completing within the schedule and scope of work assigned by the project director. The team leader will report the progress of his work twice a month to the project director who will in turn provide the County engineering staff representative with a monthly status update on all projects.

If requested by the County Stormwater staff, the project director will be available to provide briefings to County Council, advisory boards, council committees or other group on the status of work assignments, findings of project and utility operation reviews and recommendations related to the stormwater utility.

We would recommend that work assignments be issued under a task order system. Under such a system, ATM will execute a single continuing services professional services agreement with the County. As projects are developed, work scopes and fees will be incorporated into a task order prepared specifically for that project and a project file established for each task order. Costs will be tracked by task order so information related to specific cost items can be obtained quickly and accurately if needed. Utilizing the task order system will also allow our team to easily prepare invoicing for review and payment by the County. Our team has successfully used a Task order system on many of its continuing services contracts.



3 | EXPERIENCE AND QUALIFICATIONS OF THE CONSULTANT

The RFQ outlines the services needed to update the County's 2006 Stormwater Management Plan. ATM currently holds the master stormwater engineering services contract with the County and has worked with County stormwater staff to develop a detailed Scope of Work to complete the Stormwater Management Plan update. ATM's current relationship as well as extensive knowledge of present and historic stormwater and water quality issues will provide the County with a team that can quickly begin work, know what issues to focus on and concerns of the Plan participants.

To ensure that ATM can provide the County with the most locally knowledgeable, highly experienced and technically strong team of professionals for this project, we have joined forces with *Horsley Witten Group, Inc., (HW)* an exceptional company that ATM has worked with in the past. HW will bring to the ATM team extensive national as well as local knowledge and experience with stormwater system management planning, innovative stormwater pollution prevention solutions, as well as their highly qualified staff of stormwater experts.

HW team members have a working knowledge of Beaufort County's watersheds, development patterns and stormwater program strengths and weaknesses. One of the HW staff is a native South Carolinian and was a Beaufort resident prior to joining HW. HW staff also have connections with marine and stormwater researchers and policy advocates from the University of South Carolina, Clemson; SC DNR, NOAA, Sea Grant and the Hollings Marine Lab.

PROJECT TEAM QUALIFICATIONS

Applied Technology & Management, Inc. (ATM)

ATM provides environmental, coastal/marine and water resources engineering services to clients throughout the Southeast and has provided these services in the Georgia and South Carolina Lowcountry as well as internationally for well over two decades. Our public clients include municipal, county and state governments as well as local, regional and federal government regulatory agencies and utility commissions and authorities. ATM currently maintains a staff of 45 and will provide services to the County from our South Carolina offices in Okatie and Charleston.

In the areas of stormwater engineering, ATM has provided its expertise both nationally and internationally. Nationally, ATM has successfully resolved many client issues related to NPDES discharge permits (new and renewed), MS4 Regulation Plan Development and implementation and TMDL implementation. As an example, ATM developed the first multi-dimensional water quality model in South Carolina for Charleston Harbor to defend the NPDES permit holder waste load allocations and to provide new NPDES permits in the watershed. ATM also developed and conducted one of the largest water quality data collection programs in South Carolina to determine the impacts of two major wastewater treatment plant discharges on dissolved oxygen levels in the upper Ashley River in Dorchester County. ATM also holds a continuing services contract with the Florida DOT on the defense of TMDLs implemented in the entire state of Florida.

Locally, ATM's Chairman, Ed Modzelewski, has been involved in stormwater management issues for more than 26 years and is dedicated to seeing that Beaufort County fulfills their long-term goals and objectives. We are committed to supporting Beaufort County's water quality protection initiatives and assisting with coordination with local institutions such as the University of South Carolina SCDNR Waddel Mariculture Laboratory, the public as whole and other research initiatives that are underway in the County.





Horsley Whitten Group, Inc. (HW)

Incorporated in 1988, HW has expertise in civil and environmental engineering, stormwater management and design, “green” site design and new-urbanism, coastal watershed planning, groundwater science, monitoring, water supply and wastewater engineering, training, public engagement and meeting facilitation and environmental policy. HW has a professional staff of 50 registered professional civil and environmental engineers, surveyors, wetland scientists, hydrogeologists, hydrologists, Licensed Site Professionals (LSPs), marine scientists, geologists, computer modelers, land use planners and supporting personnel including graphics, GIS and AutoCAD experts. HW has fully capable graphics, GIS and AutoCAD experts. HW has employed water resource modeling at various scales and for various purposes as an integral tool in their work for over 25 years. Their staff is adept at setting up and using groundwater models, stream flow models and a variety of stormwater loading and management models

Stormwater Management Planning

In addition to providing a broad range of civil engineering and environmental design and assessment work, HW specializes in providing consulting services *in stormwater planning and program support* including: low impact development/green infrastructure design; master planning; performance monitoring; and technical information transfer and training. Their staff has significant experience working with MS4 jurisdictions; specifically on enhancing local programs, developing design standards and technical manuals and retrofitting to meet watershed and regulatory objectives. HW offers the project team both a regional and national perspective on stormwater management, planning and research.

MS4 stormwater program elements

The HW staff assigned to this project have current and former experience in South Carolina and in adjacent states including:

- Stormwater master planning for Folly Road on James Island, SC to integrate water quality and MS4 program objectives with pedestrian-friendly designs
- Current watershed assessment and stormwater planning in the City of Brookhaven, which is outside of Atlanta, GA
- Previous work on Georgia’s original stormwater design manual and the Coastal Stormwater Supplement
- Watershed assessment and planning, including stormwater restoration and local stormwater program evaluations for Kingston Lake watershed in Horry County, SC and for the Neuse River Basin in NC
- Stormwater planning, pollution prevention and stormwater program recommendations for the Town of Edisto Beach, SC
- Preliminary analysis of stormwater regulations and policies in Bluffton, SC
- Planning, instruction and facilitation for the Watershed Institute in Columbia, SC and the Southeast Stormwater Institute in Savannah Georgia for EPA Region 4. The curriculums for these trainings were organized around MS4 program requirements.



Stormwater planning for the Folly Rd. Streetscape Visioning focuses on meeting MS4 program and watershed objectives.

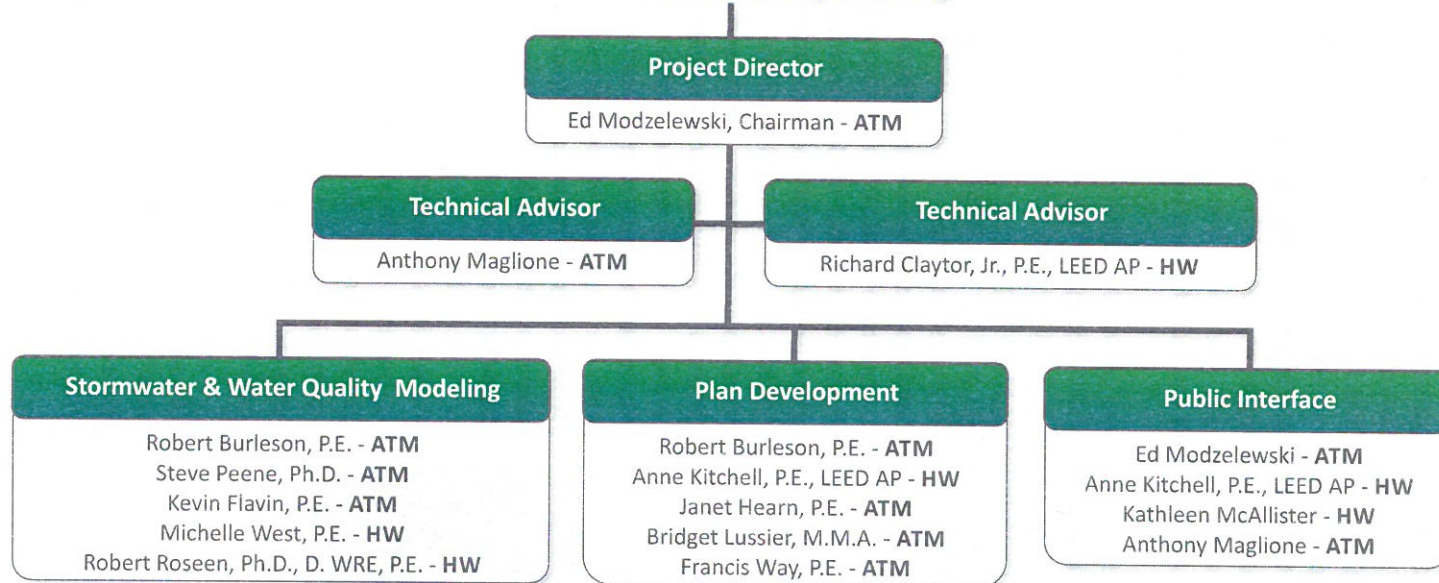
An organizational chart showing each member of the project team follows.

Project Team Organization Chart

QUALIFICATIONS TO **BEAUFORT COUNTY** FOR ENGINEERING AND CONSULTING SERVICES
 FOR 2015 STORMWATER MANAGEMENT IMPLEMENTATION GUIDE
 RFQ 07022015



Beaufort County Engineering



ATM - Applied Technology & Management, Inc.
 HW - Horsley Witten Group, Inc.

Other Resources

Dr. Chris Marsh, Ph.D.
 Dr. Fred Holland, Ph.D.
 USC Beaufort

EXPERIENCE AND REFERENCES

ATM has more than 26 years of unprecedented stormwater planning, design, management, regulatory and environmental experience in Beaufort County as well as several surrounding counties and municipalities. Our work with Beaufort County has contributed to the County being recognized as a leader in stormwater management in South Carolina. The following projects are representative of this work. Our partner firm, Horsley Witten Group (HW), has more than 25 years of innovative stormwater management experience that will compliment ATM’s capabilities. In addition, many of HW’s key staff previously worked for the Center for Watershed Protection and bring a national level of expertise to the team.

References for both ATM and HW are included in a table at the end of this section.

OKATIE RIVER WATERSHED MANAGEMENT PLAN
BEAUFORT/JASPER COUNTY, SC



SERVICES RENDERED

- Future Basin Planning
- Facility Inventory
- Hydrologic, Hydraulic & Water Quality Modeling
- GIS Development
- Stormwater Quantity & Quality Evaluations



As part of the OCRM Okatie Watershed Management Plan Special Area Management Plan (SAMP), ATM was selected to conduct an engineering study to develop a comprehensive watershed management plan for the 25-square mile Okatie River Watershed. The plan provides an understanding of the present water quality conditions in the watershed, evaluation of the effectiveness of stormwater management design and operational practices in the watershed, improvement of stormwater standards for new developments in rural areas and priority growth areas, a definition of important headwater areas and the development of additional measures to protect the upper reaches of tidal creeks, a reduction of existing flooding and water quality impacts and a minimization of economic and social losses.

ATM evaluated stormwater quantity and quality, non-point source loadings and Best Management Practices (BMP) within the watershed using the XP-SWMM model.

By use of comprehensive data collection and watershed based modeling, it is possible to identify and quantify the current and future impacts of development on sensitive fresh water and estuarine systems. Use of these tools will allow for a better assessment of the stormwater impacts of all development in the watershed and how it can be better managed to reduce pollutant loading.

Structural and non-structural alternatives to correct flooding and water quality problems for both the present and future land-use conditions were developed and evaluated. The watershed management plan provides recommendations for levels of service and guidance for future development.

3 | EXPERIENCE AND QUALIFICATIONS OF THE CONSULTANT

BEAUFORT COUNTY STORMWATER VOLUME RETENTION AND REUSE ORDINANCE BEAUFORT COUNTY, SC



SERVICES RENDERED

- Technical Research
- Development of Ordinance Concepts
- Drafting of Ordinance Language
- Presentation to County Staff & Governing Bodies



ATM developed two specific ordinances so the County could identify and begin the control of excess stormwater run-off that entered the tidal estuaries in and around the County. For many years Beaufort County worked to construct and require treatment of stormwater to remove pollutants, especially fecal coliform. The County also determined that increased levels in the volume of stormwater that is discharged may be affecting fisheries and promoting the ability of bacteria to migrate into pristine estuaries.

ATM provided technical research, development of ordinance concepts, drafting of ordinance language and presentation of the ordinance for approval of governing bodies. *This first-of-its-kind ordinance continues to be enhanced so that retention and reuse of stormwater can be mandated down to the individual lot level.*

ATM developed the technical basis for an ordinance that requires all new developments and redevelopment areas to ensure that the post-development stormwater volume leaving the site does not exceed the pre-development volume. ATM worked with County staff to develop the technical basis for this ordinance, write the specific ordinance language and to present the ordinance to the County Planning Commission and County Council for approval.

ATM also assisted the County engineering and stormwater staff with development of the second phase of this ordinance; control of stormwater run-off volume on lots that have been platted and approved but have not been built on. ATM developed an ordinance that will require on-site BMPs so that post-construction stormwater from individual lots does not exceed the pre-construction condition. ATM developed a simplified worksheet to determine the size and type of BMPs needed so that the cost to the land owner is minimal.

COOSAW POINT STORMWATER SYSTEM ANALYSIS
BEAUFORT COUNTY, SC



SERVICES RENDERED

- Site Visit of Property
- Interview with Developer
- Effective Imperviousness Calculations
- Report of Calculations & Findings



Beaufort County created volume control regulations that require on-lot BMPs if a proposed development does not provide a means to account for stormwater volume control that meets the current minimum requirements. The County and developer of Coosaw Point partnered to evaluate the BMPs of the development in the context of the “effective imperviousness.” Coosaw Point was designed approximately 15 years before the County had water quality regulations in place. However, the development has a combination of characteristics that allow for volume removal such as undisturbed vegetated areas, relatively high land elevations, soils of high infiltration rates and a ground water elevation that does not appear to significantly affect the infiltration capabilities of the soils in the majority of the development.

ATM was tasked to determine if the current BMPs at Coosaw Point met the County volumetric requirements or if on-lot BMPs were necessary to meet the volume control requirements. ATM developed modeling to simulate the conditions of the capture and onsite retention of the 1.95-inch rain event that forms the basis for the Volume Control Ordinance. This model was used to demonstrate that existing developments, such as Coosaw, may be able to meet the Volume Control Ordinance requirements without having to make major changes to their existing stormwater systems.

TOWN OF PORT ROYAL STORMWATER BMP AND TREATMENT SYSTEMS
PORT ROYAL, SC



SERVICES RENDERED

- Wetland Studies
Delineation
- Drainage System Design
- Stormwater Modeling
- Permitting
- Invasive Species
Identification
- Wetlands
Reconstruction



ATM developed a stormwater master plan to reconnect impacted freshwater wetland systems within the Town to address a number of major issues with the current stormwater drainage systems. These issues were over topping and flooding of streets near wetland systems, lack of stormwater retention and treatment and impacts of high water levels on the existing Cypress Forrest wetland vegetation and trees.

As development over the years diverted more and more stormwater runoff into these wetland systems, water levels continued to rise and the normal hydrologic cycle of drying and wetting of wetlands no longer took place. The impacts of the sustained water levels needed to be addressed from both a drainage and hydrologic perspective.

Over a four year period, ATM developed a stormwater drainage plan to interconnect three existing wetlands systems (Cypress, 15th Street and Duck Blind), to reestablish the wetland habitat and create a passive use park. As part of this long term plan ATM successfully:

- Designed a new stormwater drainage and outfall system to reestablish the natural hydrology of the wetlands, to interconnect the wetlands and to prevent flooding and road over topping
- Reconstructed the wetlands to allow for infiltration, evaporation and transpiration of stormwater
- Designed a new amphitheater, elevated and paved walkway system, overlooks and educational signage to create a passive use stormwater park
- Identify and developed a plan to harvest and manage invasive species in the wetlands so natural wetland vegetation could redevelop
- Reestablished existing rookeries

With the wetland hydrology restored, the wetlands are now being used as Stormwater Volume Control systems for over 70 percent of the land area of Port Royal that sits north of Battery Creek. The wetlands can capture and retain over 13 acre feet of stormwater without impacting the rookeries, trees or natural vegetation. This system is the only one of its type constructed in coastal South Carolina.

ENVIRONMENTAL AND STORMWATER MANAGEMENT ASSESSMENT
INDIAN HILL (EAGLE POINT) PLANNED URBAN DEVELOPMENT
BEAUFORT COUNTY, SC



SERVICES RENDERED

- Discharge to Outstanding Resource Water (ORW)
- Assessment of Proposed Water Management System
- BMP Plan
- Water Quality Monitoring Plan

ATM engineers completed a stormwater management system design assessment for the Eagle Point planned urban development at Indian Hill in Beaufort County. The system discharges to an Outstanding Resource Water (ORW), which is subject to an anti-degradation policy. ATM performed an evaluation of the proposed water management system to ensure its compliance with the water quality goals set forth in the policy.

ATM prepared pollutant-loading estimates for ten water quality parameters commonly found in urban stormwater runoff to determine the pollutant removal efficiency of the stormwater management system. A BMP plan was developed incorporating structural and non-structural practices in the system design to achieve the required system efficiency and attenuate storm flows. ATM also developed a water quality monitoring plan to evaluate river system health (for the nearby Okatie River) and water management system performance. The system has performed well to date based on monitoring results and is one of the few in Beaufort County where water quality monitoring requirements have been significantly reduced.



DUNES WEST STORMWATER SYSTEM INVENTORY AND REPAIRS
MOUNT PLEASANT, SC



SERVICES RENDERED

- Inventory and Condition Assessment of 2500 Drainage Structures & Pipe
- Modeling of 2000 Acre Stormwater System
- GIS Database Development
- Design & Permitting Various Drainage Corrections
- Inspection Services & On-Call Engineering
- Construction Administration

In 2006, ATM developed and undertook a stormwater inventory and modeling program for the entire 2,000-acre Dunes West development in Mt. Pleasant. This development was begun in 1998 and has still not reached build out. However, shortly after development began stormwater management and flooding became a chronic problem.

Work included field review of over 2,500 drainage structures, identification of each structure including condition and needed repairs, identification of all pipes and pipe sizes, pipe connection points and Global Positioning System (GPS) coordinates of each structure. Using all this data, a Geographic Information System (GIS) database was developed locating each structure and pipe and providing available attribute information on each.

ATM provided site inspection for the paving project of approximately 25 miles of roadway lead by another engineering firm.

Recently ATM successfully completed design and permitting of seven drainage improvement projects to eliminate roadway flooding, to stabilize major stormwater pipe outfalls and to create new stormwater detention facilities. These include:

- Reconstruction of historic golf course pond into a detention facility
- Wando Plantation Way New SW Drainage System (two projects)
- Darts Cove Outfall Repairs and system flushing program (two projects)

ATM services include design, modeling, permitting and construction administration services.

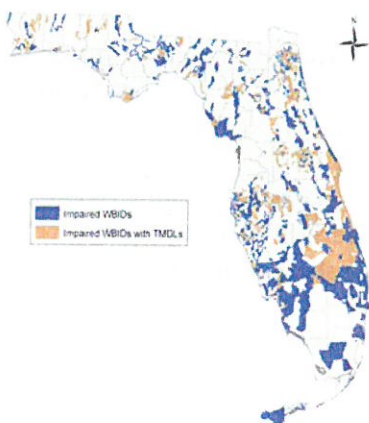
In addition to our work in South Carolina, members of the ATM team have also provided relevant stormwater services in Florida as shown in the following project examples.

STATEWIDE TMDL PLAN
FLORIDA DEPARTMENT OF TRANSPORTATION



SERVICES RENDERED

- Computer Modeling
- BMP Evaluation
- Stormwater Quantity & Quality Evaluation
- GIS Database Development
- Key Issue Identification
- Long-term Planning to Address Key Issues
- Technical Support & Representation



ATM developed a detailed Statewide Plan for the Florida Department of Transportation (FDOT) to assist them with meeting the challenges of complying with increasingly rigorous water quality standards and stormwater discharge requirements.

The work is driven by actions taken under the Federal Clean Water act to develop Total Maximum Daily Loads (TMDLs) for waters throughout the State of Florida. Elements of the plan include a development and maintenance of a comprehensive GIS database, representation and advocacy throughout all phases of TMDL development, detailed technical reviews and critiques of models and other methodologies used by federal and state agencies in proposing TMDLs. In addition, ATM has developed alternate TMDLs on behalf of the FDOT.

Through ATM's efforts, the FDOT is able to assess the potential fiscal and operational impacts of proposed regulations and implement strategies to optimize design and planning of future stormwater treatment within their rights of way.

WATERSHED MASTER PLAN – DELAND RIDGE
VOLUSIA COUNTY, FL



SERVICES RENDERED

- Future Basin Planning
- Facility Inventory
- Computer Modeling
- Stormwater Quantity & Quality Evaluation
- BMP Evaluation



ATM conducted engineering studies to develop a comprehensive watershed management plan for the 55-square mile Deland Ridge Watershed.

The study involved a comprehensive evaluation of present and future hydrologic/hydraulic conditions, stormwater quantity and quality, non-point source pollutant loadings and BMPs. Alternatives to correct flooding and water quality problems for both present and future land use conditions were developed and evaluated.

Surface water monitoring plans to meet NPDES requirements and cost estimates of recommended alternatives were also developed.

Water quantity evaluations were performed using SWMM IV. Water quality evaluations were performed using the SJRWMD's GIS-based Pollution Load Screening Model (PLSM).

An important aspect of this study is that the entire watershed is a major recharge area for the Floridan Aquifer and is karst in nature. Special emphasis is to be placed on promoting recharge, stormwater reuse and developing prudent land use management strategies to protect this drinking water resource.

STORMWATER MASTER PLAN
CITY OF JACKSONVILLE BEACH, FL



SERVICES RENDERED

- System Mapping using GIS
- Structures Inventory using GPS
- Basin Modeling
- Operation & Maintenance Plan
- Five-Year Improvement Plan

ATM developed a stormwater master plan to handle all stormwater runoff within the City of Jacksonville Beach. The project included mapping the system, modeling the basins, developing plans for operation and maintenance and preparation of a five-year capital improvement plan. GIS was utilized to develop a stormwater system atlas for the City to facilitate data management, operations and maintenance activities. ATM worked with City staff to inventory and assess the conditions of the existing stormwater drainage facilities, all stormwater facilities and structures were field verified then numbered with a description of their location and condition. The results of the structural inventory were used to identify structures that required replacement or repair and provided a basis for developing and/or refining an operation and maintenance program for the existing system. The structures inventory was performed by use of a GPS.

Based on the capital improvement plan developed as part of the stormwater master plan, selected projects that ATM permitted, designed and provided bidding and construction services for included:

- 18th Street North - Removal and replacement of 24-inch pipe and inlets along the street that did not drain properly, piping an existing ditch between 17th and 18th Streets with excavation and stabilization of two pits for settling.
- Madrid Area - Improvements included completion of a model and design report that proposed four alternatives and cost estimates for potential stormwater upgrades to the neighborhood area. The selected design option included installation of approximately 4,400 linear feet of 15-inch PVC, 700 linear feet of 18-inch PVC and 1,500 linear feet of 30-inch RCP gravity storm sewer which connected an existing stormwater pond to a new submersible triplex pump station designed under this contract.
- South Pablo Beach - New drainage system to alleviate flooding problems in the area including 2,250 linear feet of 15-inch PVC pipe, 26 inlets and a connection to an existing system.
- Wingate Park - Regrading of an existing swale, installation of additional inlets and 15-inch pipe in the parking lot and from the south end of the swale system and a new duplex submersible pump station to pump runoff through an 8-inch force main to alleviated chronic flooding issues.
- North 2nd Street - Improvements included new stormwater gravity collection and removal and replacement/upgrade of existing stormwater gravity collection. Project included a total of 3600 linear feet of stormwater piping. A new triplex pump station was constructed with a 24-inch HDPE directionally drilled force main discharging to an existing stormwater management system.

In addition, ATM also provided MS4 compliance services to the City including the development of operating protocols and preparation of annual reports.



3 | EXPERIENCE AND QUALIFICATIONS OF THE CONSULTANT

SERVICES RENDERED

- Capacity Analysis
- Flooding Determination
- BMP Evaluation
- Outfall Design
- Budget Estimation
- Development of Stormwater Utility

A comprehensive stormwater management plan was developed for the City of Venice to provide guidelines for the identification of system capacity and demands, identification of current and potential areas of flooding in the City, to establish goals, objectives and policies as mandated under the drainage element of the City's comprehensive plan and to meet compliance issues as required by the EPA's NPDES stormwater permit. The City is a co-permittee with Sarasota County.

A nine-element management program was developed with a focus on continuation of BMPs, implementation of inspections and enforcement, industrial area improvements, public education, water quality monitoring, level of service assessment, canal maintenance, erosion and sedimentation control and coastal outfall improvements.

Recommended improvements with respect to flooding problems were assessed based on recent FEMA loss list documentation and as-built records provided by the City. Development of a program with various management elements (e.g., inspections and enforcement, water quality monitoring, canal maintenance and erosion and sedimentation control) will focus on training City employees on requirements and aspects of the NPDES program. Implementation of these non-structural elements will be conducted over a five year period.

Structural improvements (LOS and coastal outfall improvements) will be performed during the second five-year period. In order to provide the funding necessary for capital improvements and NPDES compliance, ATM developed and implemented a stormwater utility for the City.

STORMWATER CHEPACHET VILLAGE INTEGRATED WATER MANAGEMENT PLAN TOWN OF GLOCESTER, RI



SERVICES RENDERED

- Capacity Analysis
- Civil & Environmental Engineering
- Wetlands Management
- Coastal Management
- Hydrogeology & Water Supply
- Stormwater Management
- Wastewater Management
- Emergency Response
- Site Assessment & Remediation
- Land Use Planning
- Education & Outreach

Chepachet Village is a historic rural village in Gloucester, Rhode Island, characterized by an eclectic mix of small-scale businesses situated in buildings constructed over the course of two centuries. The adjacent residential neighborhoods are equally diverse and create a truly classic New England village setting. As the village has continued to develop, environmental constraints have made it challenging to manage wastewater and stormwater in a manner that is conducive to environmental and public health.

HW was contracted by the Town to identify opportunities for innovative neighborhood-scale solutions to promote the safe conveyance and effective treatment of stormwater and determine the optimal locations for wastewater disposal. HW completed the analysis, design and permitting portion of the project as well as construction administration services for the wet vegetated treatment system which will treat stormwater runoff from the proposed Route 44 roadway improvements.

Services provided as part of this contract included:

- Community outreach
- Field assessment
- Feasibility analysis
- Conceptual engineering design for a decentralized wastewater treatment system in the Village area
- Design, permitting and construction oversight of a wet vegetated treatment system (constructed wetland).

STORMWATER PLANNING TO IMPLEMENT THE NATION'S FIRST
IMPERVIOUS COVER TMDL

UNIVERSITY FOR CONNECTICUT, CENTER FOR LAND USE EDUCATION AND RESEARCH



SERVICES RENDERED

- Civil & Environmental Engineering
- Wetlands Management
- Coastal Management
- Hydrogeology & Water Supply
- Stormwater Management
- Wastewater Management
- Emergency Response
- Site Assessment & Remediation
- Land Use Planning
- Education & Outreach

The impervious cover TMDL for Eagleville Brook watershed is the first in the nation based not on a specific pollutant(s), but on impervious cover – a landscape indicator that integrates the many impacts of urban development. The TMDL affects Mansfield, CT and includes much of the University of Connecticut (UConn) campus. The goal of the TMDL is to reduce effective watershed impervious cover to 11%, a real challenge in an institutional campus setting with extensive impervious cover, limited space and highly compacted soils.

In partnership with the UConn Center for Land Use Education and Research (CLEAR) and the Center for Watershed Protection, we developed a stormwater retrofit plan for UConn and Mansfield to meet the TMDL and monitor progress. HW identified more than 100 potential stormwater retrofits to help reduce stormwater runoff, effectively disconnecting over 60 acres of impervious cover. In coordination with UConn staff and integration with the campus landscape master plan, innovative concept designs for 10 priority sites were refined including a gravel based wetland system near the ball field, green street design along Eagleville Road and a terraced bio-retention facility at a large parking lot. Implementation of stormwater projects and monitoring is on-going, including permeable paving installations and green roof demonstrations.

STORMWATER PLANNING FOR VERMONT'S FLOW-BASED TMDLS
CRITTENDEN COUNTY REGIONAL PLANNING COMMISSION, (CCRPC), VERMONT



SERVICES RENDERED

- Civil & Environmental Engineering
- Wetlands Management
- Coastal Management
- Hydrogeology & Water Supply
- Stormwater Management
- Wastewater Management
- Emergency Response
- Site Assessment & Remediation
- Land Use Planning
- Education & Outreach

HW is working closely with four MS4 jurisdictions to develop stormwater master plans for Englesby Brook and Centennial Brook, which are listed by the state as impaired from excess stormwater runoff. The MS4s are required to develop Flow Restoration Plans (FRPs) that outlines a stormwater retrofit approach to meet high and low flow restoration targets of approved Total Maximum Daily Loads (TMDL). Burlington, South Burlington, the University of Vermont (UVM) and the Vermont Agency of Transportation (VTrans) are the primary regulated MS4s affected by the TMDLs.

For Centennial Brook, the major flow restoration target is a 63% decrease in high flows. The state requires use of the GIS-based model known as the Vermont BMP Decision Support System (VTBMPDSS) to demonstrate that proposed retrofits will result in attainment of flow restoration targets. In a collaborative effort with the Chittenden County Regional Planning Commission and the four MS4s, HW field evaluated, conceptually-designed and modeled over 41 potential retrofit opportunities using the VTBMPDSS. The model, which is a precursor to the SUSTAIN watershed model, is a continuous simulation model used to estimate stream flows based on a number of input parameters (e.g., drainage area, impervious cover, soils, slopes and stormwater BMPs). Retrofits of existing stormwater detention practices, as well as new BMPs (e.g., underground storage chambers, bio-retention facilities, recharge chambers, etc.) were modeled under a number of implementation scenarios to optimize performance, cost/benefit and distribution across MS4s. Over 90 acres of watershed impervious cover was managed under the final Flow Restoration Plan with an overall anticipated flow reduction of 52%.

In Englesby Brook, we are currently completing field work to identify potential opportunities to upgrade existing stormwater facilities and site new practices. We anticipate the stormwater plan to be completed this year.

STORMWATER GREENING THE MAINE MALL – STORMWATER MASTER PLANNING
 WITHIN THE LONG CREEK WATERSHED
 CUMBERLAND COUNTY, ME



SERVICES RENDERED

- Civil & Environmental Engineering
- Wetlands Management
- Coastal Management
- Hydrogeology & Water Supply
- Stormwater Management
- Wastewater Management
- Emergency Response
- Site Assessment & Remediation
- Land Use Planning
- Education & Outreach

The Long Creek Watershed Management District (LCWMD) is arguably one of the nation’s most highly- watched sustainable stormwater funding and watershed restoration experiments. Long Creek drains the cities of South Portland, Westbrook, Portland and the Town of Scarborough. The high percentage of watershed imperviousness has contributed to poor aquatic health, habitat disruption, elevated water temperatures and impairment for metals, chloride and dissolved oxygen. The LCWMD, established in 2009 as a public/private partnership to finance and oversee implementation of stormwater planning and implementation of retrofits on public and private lands, is charged with implementing restoration measures to reverse past abuses. Dozens of stormwater retrofits have been implemented in the Long Creek watershed including the now famous Maine Mall road porous asphalt installation. LCWMD is now embarking on its largest retrofit project, the “Greening of the Maine Mall.” The Mall was constructed in the early 1970’s without much in the way of stormwater management. Today the Mall includes ~90 acres of impervious cover, a third of which is managed by a poorly performing detention pond.

In May of 2014, we began working with the LCWMD and Mall property owners (e.g., General Growth Properties, Sears and Macy’s) to assess current stormwater conditions and plan for comprehensive stormwater improvements within the context of the Long Creek Watershed Restoration Plan. This effort is more than a typical retrofit project, as a key objective is to plant more trees and incorporate pedestrian and aesthetic improvements. The “greening” includes:

- Converting the existing detention basin to a gravel wetland with subsurface storage chambers to enhance treatment and meet thermal discharge goals (currently under construction)
- Integrating landscape master plans with vegetated stormwater practices and expanded landscape islands throughout the parking field
- Quantifying the benefits of increased tree canopy on air quality, energy savings and stormwater benefits using iTree modeling tools
- Modeling water quality benefits using WinSLAMM

REFERENCES

REFERENCE	PROJECT
Applied Technology & Management, Inc.	
Barbara Neale, Senior Program Analyst SCDHEC 843-953-0245 nealeb@dhec.sc.gov	Okatie River Watershed Management Plan Beaufort/Jasper County, SC
Van Willis, Town Manager Town of Port Royal 843-986-2205 vwillis@portroyal.org	Town of Port Royal Stormwater BMP and Treatment Systems Town of Port Royal, SC
John Watkins, Community Assoc. Manager 843-881-8488 j.watkins@scs-carolina.com	Dunes West Stormwater System Inventory and Repairs Mount Pleasant, SC
Mr. Weston Newton – former chairman of Beaufort County Council 843-706-6111 wnewton@jsplaw.net	Beaufort County Stormwater Volume Control Ordinance Beaufort, SC
Horsley Witten Group	
Chester Arnold, CLEAR Director for Outreach University of Connecticut 860-345-5230 chester.arnold_jr@uconn.edu	Stormwater Planning to Implement the Nation’s First Impervious Cover TMDL Eagleville Brook, CT
Gary G. Ayrassian, Director Department of Planning and Development City of Attleboro 508-223-2222 ext. 3143 cityplanner@cityofattleboro.us	Reference for overall stormwater services provided by HW
Tamara Pinard, Stormwater Program Manager Cumberland County Soil & Water Conservation District 207-892-4700 tpinard@cumberlandswcd.org	Stormwater Greening - The Maine Mall – Stormwater Master Planning Cumberland County, ME
Megan Moir, CPESC, CPSWQ City of Burlington Stormwater Program Manager 802-734.4595 mmoir@burlingtonvt.gov	Stormwater planning for Vermont’s flow-based TMDLs, Chittenden County Regional Planning Commission



- 1. ATM's Federal Employer Identification Number: 59-2413268
- 2. Beaufort County Business License Number: 2471 - Expires 12/31/15

POST IN A CONSPICUOUS PLACE

COUNTY COUNCIL OF BEAUFORT BUSINESS AND PROFESSIONAL LICENSE

License Number 2471

THIS LICENSE EXPIRES 12/31/2015

Business Name: APPLIED TECHNOLOGY & MGMT
 Address: EDWARD H. MODZELEWSKI
 PO BOX 24156
 HILTON HEAD ISLAND, SC 29925

Phone Number: 843-837-9525

****Notice****
 This license becomes null & void if ownership, business name, or address is changed. Licensees must apply within 10 days of such change for transfer. Fees will apply. All applicable building & zoning regulations pertaining to business location must be followed.

Classification: ENGINEERING SERVICES
 Date Issued: 01/29/2015

By *Edra D. Stephens*
 EDRA D. STEPHENS, DIRECTOR

PAID

This License is NOT Transferable

- 3. ATM's South Carolina COA license BCO1003240 is current with the State Board of Registration for Professional Engineers and Surveyors and expires in March 31, 2017.



KEY STAFF OVERVIEWS

We have assembled a team of experienced engineering and management professionals that are capable of developing all aspects of the County's Stormwater Management Implementation Guide as well as providing the technical aspects of the program. The key leaders of our team are:

Edward Modzelewski, Project Director - Mr. Modzelewski founded ATM in 1984 as a specialized water resources engineering and environmental consulting company. His early experience in Beaufort County dates back to 1984 and was focused on water quality management and protection. Over the last 30 years Ed and his management team have expanded services throughout the coastal U.S. and Internationally. Ed has acted as Project Director or Principal in Charge on a number of water resources initiatives throughout his career. He is a full-time resident of Beaufort County and is the professional who *developed the first water quality sensitive stormwater management plan* for a major residential development in Beaufort County (Eagles Point) nearly 20 years ago. Since that time he has been involved with many stormwater initiatives, including the Okatie River Basin Study, as part of the SAMP and the development of the County's Stormwater Volume Control ordinance. Ed and his team at ATM have developed innovative stormwater control programs in other coastal states in the Southeast and introduced some of these techniques in Beaufort County over the last 25 years.

Richard A. Claytor, Jr., P.E., Technical Advisor – Mr. Claytor has more than 30 years of practical experience in civil and environmental engineering with specific expertise in water resource planning, design, implementation, research, education and training. He has extensive experience in stormwater management practice design and policy implementation. Within these areas, he has a wide range of expertise, including site/roadway design, permitting, research, training, education, program assessment, implementation plans, policy evaluations and construction administration. He has authored a variety of stormwater manuals and publications on stormwater policy, design and implementation and presented at dozens of training workshops and conferences over the last two and a half decades. He was the principal engineer of watershed planning, stormwater management and stream restoration projects for a wide range of projects throughout New England and the Mid Atlantic.



As **President of Horsley Witten Group**, Mr. Claytor directs HW's activities with a particular focus on engineering and surface water hydrology. He provides oversight of all projects involving the development of watershed planning strategies; engineering design, permitting and construction administration for a variety of stormwater management and site engineering projects; watershed planning and implementation projects; and assisting communities with compliance with EPA's Municipal Separate Storm Sewer System (MS4) General Permit implementation.

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Anthony Maglione, Technical Advisor - Mr. Maglione has been a principal with ATM for the past 17 years and has planned and overseen development of many stormwater projects in the Lowcountry. His projects include the Cypress Wetland Stormwater Management System for the Town of Port Royal, Stormwater Inventory and Master Plans for Hardeeville and Port Royal and development of *Beaufort County's Stormwater Volume Control Ordinance*. Prior to joining ATM, Mr. Maglione was Director of Design and Construction for the Charleston Water System where he developed and managed a \$300 million, 10-year environmental related capital improvement plan as well as many innovative utility management programs. Mr. Maglione has concentrated his practice on assisting county and local governments in the management of stormwater and wastewater utilities and services.

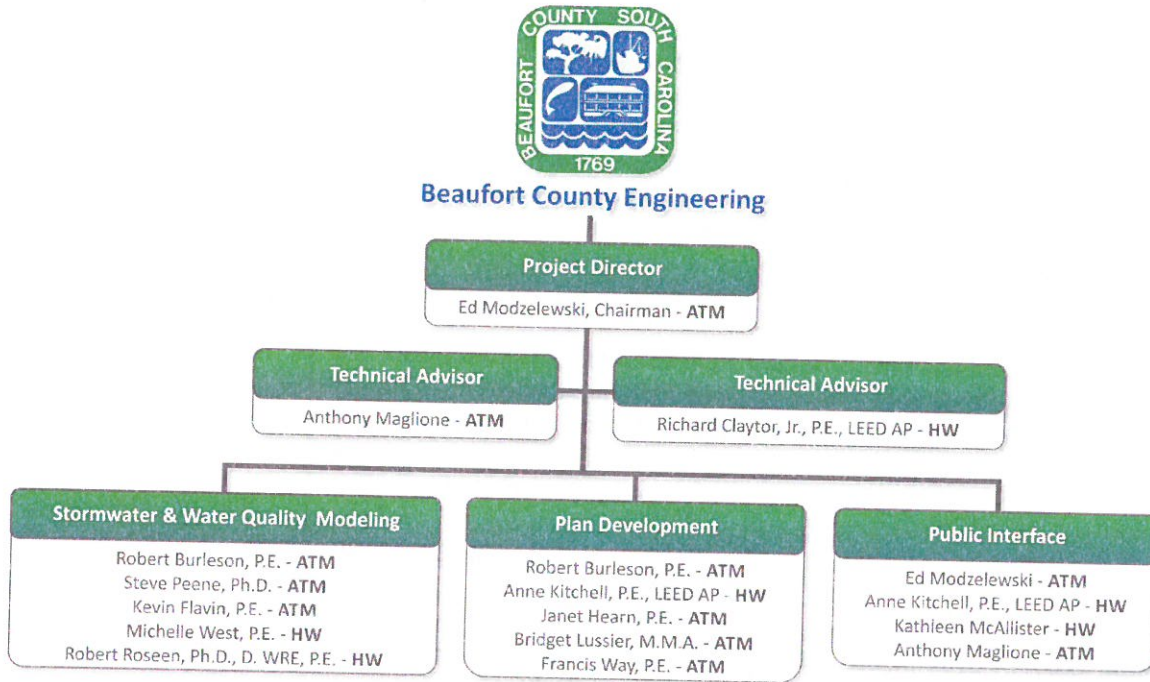


Robert Burluson, P.E. - Mr. Burluson is an ATM water resources engineer with over 25 years of experience. His expertise includes stormwater master plans, hydrologic research and analysis, water quality assessments, river basin management plans, watershed and water quality modeling, effluent disposal and wetland treatment system design. His experience focuses on the development of environmental flows, watershed assessments and the assessment of receiving water quality impacts from anthropogenic discharges. He has applied various hydrologic, hydrodynamic and water quality models and has provided modeling services in South Carolina on a number of projects for the Town of Bluffton, Beaufort County. He developed a comprehensive watershed management plan for the 24-square mile Okatie River Watershed in Beaufort/Jasper County as part of the Beaufort SAMP. He developed the first water quality sensitive (anti-degradation) stormwater management plan for a major residential development in Beaufort County (Eagles Point) and designed the supporting monitoring program to assess compliance. He has written a number of stormwater management plans for clients in Florida and is an integral part of the ATM team providing TMDL and BMAP support to the Florida Department of Transportation and several other Florida counties.

Anne Kitchell, LEED AP – Ms. Kitchell has 15 years of practical experience in watershed planning and stormwater management, including stormwater retrofitting, site planning, pollutant load modeling, environmental program and regulatory evaluations and technical training. With a background in marine science and coastal zone management, she focuses much of her work on assisting coastal and island jurisdictions reduce watershed-based sediment and nutrient loading to nearshore waters. She has worked with dozens of communities to develop watershed plans and enhance local stormwater management programs throughout the Southeast, mid-Atlantic, New England and Pacific and Caribbean regions. She is HW's lead environmental planner providing technical guidance on MS4 permit requirements, including training workshops for agency and municipal staff, consensus building and public involvement. Ms. Kitchell has experience with post-construction stormwater design and review, erosion and sediment control certification training, and implementation of drainage improvements and watershed restoration projects. She is the primary author on a stormwater guidance manual for Pacific and Caribbean islands, as well as a number of technical publications related to watershed restoration.

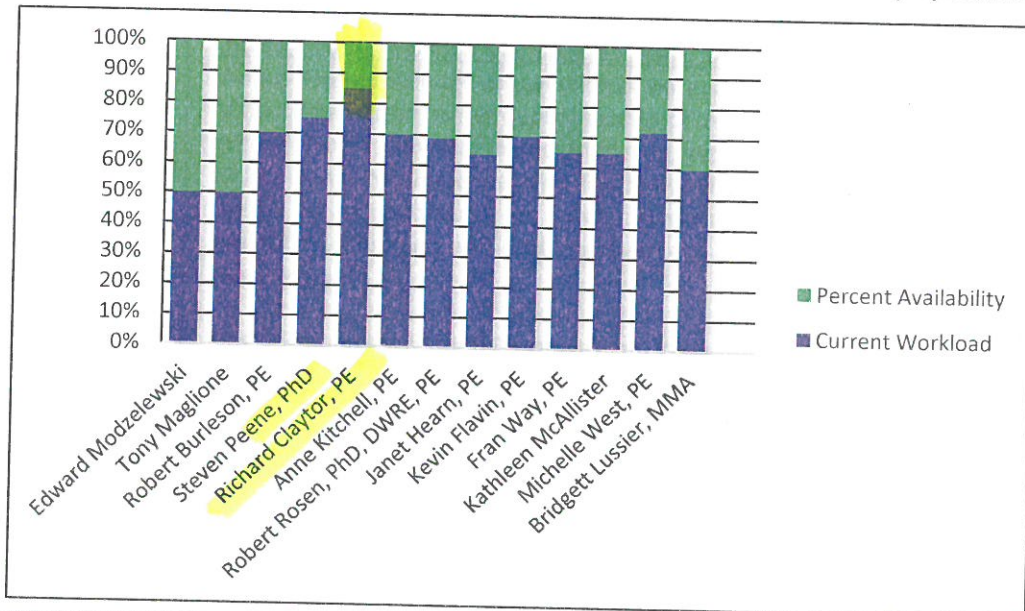
TEAM ORGANIZATIONAL CHART

Resumes are included for all staff listed on the organizational chart.



CAPACITY TO PERFORM

ATM's proposed project team has sufficient availability, based on our current and projected workload, to provide Beaufort County with the necessary human resources to complete the project tasks on time. All ATM project team members including Horsley Witten staff are available to begin work *immediately* upon execution of a contract with the County. In addition, our team is committed to meeting all budgetary goals and timeframes required of the project. The chart below estimates the percent of availability by staff member.



YEARS OF PROFESSIONAL EXPERIENCE:

Total: 40
ATM: 31

AREAS OF SPECIALIZATION

- Water quality
- Environmental Services
- Water Resources

EDUCATION

M.S., Environmental Sciences, Louisiana State University, 1973

B.S., Marine Sciences, University of Miami, 1970

AFFILIATIONS

- Urban Land Institute

SUMMARY OF QUALIFICATIONS

Ed Modzelewski is Founder and Chairman of Applied Technology and Management (ATM) which will celebrated its 30-year anniversary in 2014. ATM is a specialty engineering and environmental services firm with expertise in Water Resources, Environmental and Coastal Engineering with nine offices located in South Carolina and Florida; and an International office in Dubai, UAE. Ed and ATM staff have been involved in the study of ecological and water resources in Beaufort County for more than 25 years with a strong focus on providing sustainable engineering solutions to complex environmental issues associated with coastal development of resort and residential properties and amenities.

Mr. Modzelewski has authored more than 50 studies and reports regarding the impact of coastal development on water quality and hydrology. He has lived in Beaufort County for more than 20 years. ATM has been involved in numerous studies of Outstanding Resource Waters (ORW's) to include the Okatie River, Colleton River, Broad Creek and the May River.

PROJECT EXPERIENCE

Stormwater Utility Volume Reduction Ordinance 1 and 2, Beaufort County, SC – Principal-in-charge for control of volume reduction, 2010. Project included preparation of work elements plan, technical investigations and formulation of scientific basis for control of runoff volume, computer modeling and analytical techniques for project evaluations, testing of models, design criteria and BMP effectiveness for a variety of development scenarios. Project included public and scientific community outreach program, coordination and education of special interest groups (developers, homebuilders) and participation in public meetings and all presentations to Beaufort County Natural Resources Committee, County Council. Projects coordinated with Beaufort County Planning, Engineering, Stormwater Advisory group and Public Works.

Okatie River Watershed Management Plan, SAMP, DHEC, OCRM - Principal-in-charge. Project included preparation of watershed and sub-watershed mapping of the Okatie Basin, water quality studies of the Okatie River, development and execution of stormwater impact modeling, identification of non-point pollution sources and recommendations for regional stormwater management and control areas, opportunity for specific problem area control and suggestion of analytical techniques and Best Management Practices (BMP's) for the Okatie River system.

Water Resources, Natural Resources and Water Quality Study of Braniger Union Camp Holdings, Beaufort and Jasper County, SC - Project principal and manager. Developed complete inventory of water resources on more than 25,000 acres of property including mapping of watersheds (rivers, streams and creeks) including inventory water quality data to determine environmental sensitivity of land holdings. Production of numerous project reports to Braniger executive team.

Buckwalker Tract, Branigar, Beaufort County, SC – As project manager was responsible for the development of a watershed study for 15,000 acres of prime development land in Beaufort County. Emphasis on design of water resource element to protect the headwaters of the Okatie, May River and New Rivers which are classified as Outstanding Resource Waters by the State of South Carolina.

Okatie Estates (Indigo Run), Master Stormwater Management Plan, Okatie, SC - Developed Stormwater Management Plan for the Okatie River Basin holdings including design of large retention/detention system prior to outfalls to the Okatie River, using a unique water drawdown approach developed by ATM in Florida.

Stormwater Master Plan for the Eagles Point Residential and Golf Course Development - Covelli Development Company, SC - Project principal and manager. Completed one of the first innovative Stormwater Management Plans in Beaufort County designed to reduce volume of stormwater discharge reduce pollutant loading using a multiple BMP train. Developed water quality demonstration project to demonstrate water quality conservation for DHEC Water Quality Certification. ATM developed a computer model to simulate volume reduction and pollution reduction by in-series BMP's and the first long-term monitoring plan in Beaufort County for a stormwater management system. Follow-up studies concluded that the project, as built, has effectively managed stormwater and has not contributed to degradation of the Okatie River.

Stormwater Master Plan for the Okatie Estates Tract (now called Oldfield), Covelli Group, SC – Project principal/project manager. Prepared a pre-development Stormwater Master Plan with emphasis on controlling stormwater runoff to the Okatie River, near the confluence of the Colleton River. Study included development of watershed and sub-watershed mapping, computer modeling of runoff and BMP removal efficiencies and recommended stormwater management design and BMPs.

Environmental Studies Program for the Indigo Run Waterfront Development, Hilton Head Company, Hilton Head, SC – Responsibilities included developing water budget and stormwater management alternatives for residential and commercial marina facility. Studies also included an assessment of shell fisheries resources and mitigation plan.

Kiawah Island Environmental Studies Program for Resort Marina Development, Kiawah Island Company, SC – Project director responsible for environmental studies including stormwater management, terrestrial and aquatic ecology, coastal hydrology, water quality assessment, water resources modeling in support of Coastal Council and USACOE permits. Assessed environmental, economic and social impacts of waterfront development. Assessed impact of major marina on traffic, transportation and bridge openings. Provided impact assessment on important shellfish resources and developed shellfish mitigation program, dredging and disposal plan.

Moss Creek Marina, Moss Creek Plantation, Hilton Head, SC – Project director for environmental impact assessment according to the published guidelines of the South Carolina Coastal Council. Conducted hydrology, stormwater analysis and water quality study of marina and shore-based facility expansion. Studies included aquatic and terrestrial ecology, social, economic, transportation and bridge opening impacts. Studies also included impact assessment on shell fisheries and dredging and disposal plans.

Willbrook Plantation, The Litchfield Company Myrtle Beach, SC – Project director for preparation of a stormwater and water quality assessment of a proposed waterfront development along a marina and extensive canal system. Studies included development of a hydrodynamic model of the canal system and environmental impact assessment on water quality and fish and wildlife resources. The study program included a dredging and disposal plan.

YEARS OF PROFESSIONAL EXPERIENCE:

Total: 40
ATM: 17

AREAS OF SPECIALIZATION

- Management and Design of Water, Wastewater and Stormwater Systems
- MS4 Phase II Compliance
- Water Quality and NPDES Discharges
- TMDL Issues
- Program Management
- Utility Rates, Finance, Accounting and Ordinance Development
- Utility Acquisition

EDUCATION

B.S., Engineering
Technology, Clemson
University, 1975

SUMMARY OF QUALIFICATIONS

Mr. Maglione has extensive experience in the operations, management and design of sustainable stormwater systems and water quality related water, wastewater and stormwater regulatory issues. He has been involved in all aspects of site development, including design and permitting of water, wastewater and stormwater systems. He has worked extensively with implementation of stormwater master plans and MS4 Phase II regulatory compliance in South Carolina, as well as with development of innovative and leading edge stormwater ordinances and projects. Most recently he oversaw the rehabilitation and improvements to the Cypress Wetland system in the Town of Port Royal, South Carolina. In addition, he developed a detailed scope of work to collect and analyze all water quality and NPDES permitting data for the Tyger River and Pacolet River watersheds in upstate South Carolina and provides project management for the development of this GIS data base.

He has also provided expert witness services for the South Carolina Association of Stormwater Managers in its appeal of the SC MS4 General Permit and was Project manager for development of the recent Beaufort County Stormwater Volume Reduction Ordinance. He led ATM's team that developed stormwater ordinances and design manuals for Georgetown County, Bluffton and Dorchester County. He also assists Georgetown and Dorchester County with implementation of their MS4 programs.

Mr. Maglione leads ATM's industrial and governmental client team and has developed and managed a number of innovative wastewater and stormwater projects. He was responsible for ATM's TMDL development efforts in the Charleston Harbor System, as well a number of water quality studies.

PROJECT EXPERIENCE

Beaufort County Stormwater Reduction Ordinance, SC – Project manager responsible for development of the County's Stormwater Reduction Ordinance. This ordinance is the first of its type that requires new and developed areas to retain and reuse any newly created stormwater runoff within the project. The ordinance is designed to limit freshwater flows (in the form of stormwater) from contributing to the degradation of estuaries.

Regional Stormwater Treatment System, Bluffton, SC – Project manager for a three-phase project proposed to correct changes in natural stormwater storage and runoff affected by development. ATM first developed a stormwater pollutant loading assessment for the Town and is currently modeling and completing the conceptual design of stormwater improvements for creation of an 11-acre stormwater management system.

Okatie Crossing Stormwater System Design, Jasper County, SC – Designed the first large scale stormwater management system and application of stormwater volume retention controls for a 230 acre commercial center that controlled not only stormwater pollutant discharge but also ensured that post-development stormwater runoff volume did not exceed pre-development quantities. ATM designed a number of large stormwater BMPs that created a stormwater reuse system to ensure no additional stormwater flow left the site after development.

Stormwater Management Program, Georgetown County, SC – Project manager for ATM’s five-year continuing services contract. Services included development of an MS4 compliant stormwater ordinance and design manual, implementation assistance with the county’s MS4 program, capital improvements planning, design of five drainage projects, development and implementation of the county’s stormwater utility, development of dredging analysis for Pawley’s Island’s public boat landing.

Cypress Wetland Drainage Improvements and Restoration, Port Royal, SC – Project manager for ATM’s work with modeling and design of stormwater drainage system improvements needed in Port Royal to prevent flooding from stormwater being discharged to four existing large depressed wetland systems in Port Royal. Work included wetland restoration planning to reestablish proper hydrology in the wetland systems, take advantage of their ability to retain, infiltrate and treat stormwater. Construction oversight was performed of a passive use park within one of the 11-acre wetland systems. This project includes construction of elevated walkways, view platforms and a 200 person amphitheater that will be used for public events and education.

Pervious/Impervious Mapping, Bluffton, SC – Project manager for the GIS project to estimate the amount of impervious land coverage within the Town of Bluffton.

Carolina Waterway Plantation Storm Water Management Plant - Southeastern Land Sales, Myrtle Beach, SC – Project Manager responsible for performing a stormwater management system analysis and evaluation to determine if the current stormwater management system for the development will effectively treat stormwater runoff to the discharge limits set by the regulators. Best Management Practices and the Stormwater Management Plan were developed as well as a storm water system redesign after Hurricane Floyd.

International Paper Towne Center; Myrtle Beach, SC – Project Manager responsible for development of a stormwater management system for a 950 acre tract of land being marketed by International Paper Realty. ATM developed a pre- and post-development stormwater loading assessment model, recommended BMPs to be constructed in each tract within the property and assisted with OCRM permitting approval of the overall stormwater master plan.

Tyger and Pacolet River Watersheds, Spartanburg Water System, Spartanburg, SC – Project manager for development of a plan of action for collection, consolidation and review of all existing water quality monitoring stations, NPDES permits and other water quality related data for the Tyger River and Pacolet River watersheds. Work includes collection of all data, development of a GIS data base to house data and allow quick access to multiple levels of data, analysis of data and recommendations for specific actions to be taken in the watershed to protect current NPDES permitted discharges.

Beaufort County 10% Effective Impervious Area Assistance – At the request of the County Stormwater staff, reviewed and made specific recommendations related to the inability of a project to meet the 10% Effective Impervious goal set in the County’s Stormwater BMP manual. Provided a written explanation and recommendations related to the issue as well as provided input to the County Council Natural Resources Committee and the County SWAB.

Multiple Stormwater Improvement Project, Town of Port Royal, SC – Project Manager for 10+ years for the design, permitting and construction oversight for drainage improvement projects throughout the Town. Currently overseeing construction of the Paris Ave. stormwater system and outfall improvements project. Past work included Casablanca area drainage improvements, 9th Street and Madrid Ave. drainage improvements, 13th Street and Paris Ave. drainage improvements, Cypress Wetlands/15th Street Wetland and Duck Blind interactive drainage system modeling, planning and design project.

Dorchester County, SC – Project Manager responsible for assisting the County with development of a stormwater ordinance and design manual, implementation of its MS4 program, review of proposed ordinances, conducted workshops for Council related to define level of public services and works with County Planning and Engineering staff with development of Public Works Improvement Districts.



Richard A. Claytor, Jr., P.E.

President

Areas of Expertise

- Stormwater Management
- Civil Engineering
- Environmental Engineering
- Wetland & Natural Resource Area Assessments
- Environmental Permitting & Compliance
- Smart Growth/ Low Impact Development & Design
- Watershed Planning & Assessment
- Surveying
- Site Design
- Training

Professional Registrations

Professional Engineer:
Massachusetts, New Hampshire, New York, and Maryland

Massachusetts Certified Soil Evaluator
LEED Accredited Professional

Professional Affiliations

MA DEP Stormwater Policy Advisory Committee
Town of Sandwich, Historic District Committee
American Society of Civil Engineers

Rich Claytor has more than 30 years of practical experience in civil and environmental engineering with specific expertise in water resource planning, design, implementation, research, education, and training. Rich has extensive experience and expertise in stormwater management design, implementation, program assessment, policy and evaluation. Rich also is experienced in watershed planning, training and education; water resource assessment, research, and permitting; water supply and wastewater design; land use planning, site design and research; storm drainage, erosion/sediment control, and roadway design; and construction administration. He has authored a variety of stormwater manuals and publications on stormwater policy, design and implementation, and has presented at dozens of training workshops and conferences over the last two decades. He has been the principal designer of stormwater management and stream restoration measures for a wide range of projects throughout New England and the Mid Atlantic.

REPRESENTATIVE PROJECTS

2014-2015 Vermont Agency of Natural Resources, Update to Statewide Stormwater Management Manual: Principal-in-Charge for technical support as a subconsultant to Stone Environmental, Inc. for the update of the 2002 Vermont Stormwater Management Manual to incorporate low impact development/green infrastructure practices, runoff reduction criteria and other updates as appropriate to reflect evolution of stormwater management considerations in the last decade.

2010 Rhode Island Stormwater Design and Installations Manual Update: Principal-in-Charge and co-author for the updated state Stormwater Manual to incorporate low impact development practices for all new and redevelopment projects. It features the integration of site design criteria with structural stormwater control practices to create a comprehensive stormwater management approach that requires runoff reduction, and specified nutrient, pathogen, and increased TSS pollutant removal.

Maine Mall Retrofit Design and Construction, South Portland, ME: Principal-in-Charge for the identification, design, permitting, and construction administration for the "Greening of the Maine Mall," a key component of the Long Creek Watershed Management District's charge to restore Long Creek to meet water quality standards. Rich is leading HW's team of engineers and landscape architects to identify and install a range of green infrastructure practices at the mall property.

Roger Williams Park Water Quality Improvement Plan, Providence, RI: Principal Engineer to improve the water quality and biodiversity conditions of the Park's urban ponds. The project focused on development of a water quality improvement plan to include pollutant-loading analyses, the establishment of long- and short-term water quality goals, identification of feasible stormwater retrofits, assessment of in-pond treatment options, and design, permitting, and construction administration of the five highest priority stormwater retrofit BMPs.

Promoting Green Infrastructure (GI) in the City of Chelsea, MA (2012): Principal in Charge to assist US-EPA Region 1 in promoting the use of GI in the Chelsea. This project informed the public about GI by developing outreach materials and reviewed existing City and State codes relative to the use of GI practices and suggested code improvements. The project also educated regulatory board members and City staff members on options, benefits, limitations, and costs of GI and provided plan review examples by presenting the technical material at a targeted workshop.



Richard A. Claytor, Jr., P.E.

President

Academic Background

Bachelor of Science, Union College, Civil Engineering, Concentration in Hydrology, Hydraulics, Water Resources, and Geotechnical Engineering

PROFESSIONAL EXPERIENCE

Horsley Witten Group, Inc., President, 2013-Present; Principal Engineer, 2001 to 2013

Center for Watershed Protection, Principal Engineer, 1994 to 2001

Loiederman Associates, Inc. (now Soltesz), Vice President and General Manager, 1985 to 1994

Greenhorne and O'Mara, Inc. (Now Stantec), Design Engineer, 1983 to 1985

Assessment of Climate Change Impacts on Stormwater BMPs in Coastal Massachusetts: Principal-in-charge for this assessment of likely impacts to stormwater management practice performance as consequence of climate change and resulting sea level rise and changes in precipitation characteristics. The project is being funded by the Massachusetts Office of Coastal Zone Management.

Engineering Design and Assessment of Stormwater Management for MassDOT's Impaired Waters Program: Principal-in-charge for several tasks to evaluate and design stormwater retrofit project assignments to address runoff from MassDOT rights-of-way across the Commonwealth.

Green Infrastructure Retrofit at Mace Housing Facility, Chelsea, MA: Principal-in-Charge for design, permitting, and construction of green infrastructure/green street stormwater retrofits within the ultra urban city environment of Chelsea, MA. The site is adjacent to the environmentally-sensitive Mill River. The design included pavement reduction and stormwater planters for enhanced runoff treatment and reduced transport of pollutants.

Stormwater Retrofit Design and Buffer Restoration, Mill River Park and Riverwalk, Taunton, MA: Principal-in-Charge for stormwater retrofit and buffer restoration measures in conjunction with the design of the Mill River Park and Riverwalk in downtown Taunton, MA. Rich oversaw an integrated team to design an urban green space that removed impervious surface, treated stormwater runoff, restored floodplain area, and controlled invasive species.

Comprehensive Evaluation of Alternative Strategies for Combined Sewer Overflow Reduction, New York City: Principal Engineer and part of a team under contract with the New York City Department of Environmental Protection to evaluate and implement a series of pilot LID stormwater retrofits projects to reduce the contribution of stormwater to combined sewer systems. The project involved site evaluations, design, construction, and monitoring of a variety of stormwater best management practices (BMPs) across a range of city owned properties.

Upper Charles River Sustainable Stormwater Funding Assessment, Bellingham, Franklin, & Milford, MA: Project Director for the assessment and dissemination of a technical report documenting the feasibility of widespread implementation of stormwater control measures to meet TMDL requirements and the requirements for a sustainable funding source through a Stormwater Utility structure.

Bare Hill Pond Village Stormwater Master Plan and Implementation, Harvard, MA: Principal Engineer for the identification, assessment, prioritization, design and implementation of more than a half-dozen green infrastructure stormwater control measures to retrofit stormwater management for the 100 acre Village Center of Harvard, MA. Measures included an off-line submerged gravel wetland for enhanced phosphorus treatment.

Taunton Watershed Taunton River Watershed Management Plan, MA: Principal-in-Charge for this multi-year project funded by the Commonwealth of Massachusetts. This project evaluated surface and ground water impacts from land development within the more than 35 watershed communities, and made recommendations to keep water local and restore natural hydrology and habitats. The project included the design of six pilot projects, incorporating low impact development techniques, alternative wastewater management methods, and habitat restoration.

YEARS OF PROFESSIONAL EXPERIENCE:

Total: 27
ATM: 17

AREAS OF SPECIALIZATION

- Water Resources Engineering
- Surface and Ground Water Hydrology
- Watershed Planning
- Hydrologic, Hydrodynamic, and Water Quality Modeling
- Stormwater Management
- Urban and Agricultural Best Management Practices
- Wetland Treatment Systems

EDUCATION

M.E., Agricultural Engineering, University of Florida, 1988

B.S.E., Agricultural Engineering, University of Florida, 1984

B.S.B.A., Finance - University of Florida, 1979

PROFESSIONAL REGISTRATIONS

- Professional Engineer (Civil), Florida, 1990, No. 42497
- Qualified as an expert witness in Florida Administrative Hearings – hydrology, water resources engineering and modeling of surface water systems.

AFFILIATIONS

- American Geophysical Union
- American Water Resources Association
- American Society of Civil Engineers

SUMMARY OF QUALIFICATIONS

Mr. Burlerson is a water resources engineer and his areas of expertise include water resources engineering, surface and ground water hydrology, watershed planning, surface water quality modeling, storm water management, reclaimed water reuse and urban and agricultural best management practices. His professional experience includes hydrologic research and analysis, water quality assessments, river basin management plans, stormwater master plans, floodplain analysis, watershed and water quality modeling, effluent disposal and wetland treatment system design.

Mr. Burlerson has conducted hydrologic and water resource investigations throughout the southeast. This experience covers most aspects of water resources including master planning, permitting, design and analysis of urban, agricultural and industrial facilities. He has prepared watershed and water management master plans for urban, agricultural and rural study areas. These master plans have included the evaluation and development of best management practices programs, capital improvement programs, and the development and implementation of complex hydrologic, hydraulic and water quality computer models. He has applied various hydrologic, hydrodynamic and water quality models including SWMM, ICPR, PONDS, HEC-HMS, HEC-2, HEC-RAS, MODFLOW, BASINS, WASP, PLUMES, CORMIX, DHI-MIKE ECO Lab, ArcGIS and Groundwater Vistas.

Mr. Burlerson is qualified as an expert witness in Florida Administrative Hearings in the areas of hydrology, water resources engineering and surface water modeling.

PROJECT EXPERIENCE

Okatie River Watershed Management Plan, SC Department of Health and Environmental Control (SCDHEC) – Developed a comprehensive watershed management plan for the 24-sq. mi. Okatie River Watershed in Beaufort/Jasper County. Study involved an evaluation of present and future hydrologic/ hydraulic conditions as well as stormwater quantity and quality, nonpoint source pollutant loadings, BMPs, and current water quality conditions. Alternatives to correct flooding and water quality problems for both present and future land use conditions were developed and evaluated. Recommendations included a capital improvements program, non-structural BMP implementation, and ordinance and regulatory modifications. XPSWMM was used to perform hydrologic, hydrodynamic, and water quality analyses.

Stormwater Management Assessment, Consolidated Resort Services, Indian Hill (Eagle Pointe), Beaufort County, SC – Performed an assessment of a stormwater management system design to serve the proposed Indian Hill planned urban development in Beaufort County. Work included nonpoint source pollutant loading evaluations for existing and proposed conditions, evaluation of treatment requirements to meet SCDHEC water quality goals, and the development of a recommended BMP plan to achieve the water quality goals.

Bluffton Park Hydrologic Assessment, Bluffton, SC – Used ICPR3 to perform hydrologic/ hydraulic modeling of the Bluffton Park development and surrounding wetland areas. Alternatives for restoring wetland hydroperiods and freshwater flow patterns to Verdier Cove/ May River were developed including a proposed stormwater wetland/environmental park.

Proposed WOTUS Regulations, Beaufort County, SC – Performed a review of proposed Waters of the United States EPA regulations to determine the impact of these regulations on existing and future drainage and stormwater BMP systems within Beaufort County.

Stormwater Quality Evaluation, Silver Carolina, Inc. – Project Engineer and Technical Director for a study to evaluate stormwater quality of the proposed 2,400-acre Barefoot Landing Resort in North Myrtle Beach, SC. Work included nonpoint source pollutant loading evaluations for existing and proposed conditions; evaluation of treatment requirements to meet SCDHEC water quality goals for BOD and fecal coliform for the Intracoastal Waterway, a 303(d) listed water; and the development of a recommended BMP plan to achieve the water quality goals. Methodologies were developed for use by future developers at the site to design BMP plans for individual development parcels.

Deland Ridge and Turnbull Creek Watershed Management Plans, Volusia County, FL – Performed engineering studies to develop a comprehensive watershed management plan for the 60-square mile Deland Ridge Watershed and for the 17-square mile Turnbull Creek Watershed. The study involved a comprehensive evaluation of present and future hydrologic/hydraulic conditions as well as stormwater quantity and quality, nonpoint source pollutant loadings, and BMPs. Alternatives to correct flooding and water quality problems for both present and future land use conditions were developed and evaluated. Surface water monitoring plans to meet NPDES requirements and cost estimates of recommended alternatives were developed. Recommendations included a capital improvements program, non-structural BMP implementation, and ordinance and regulatory modifications. SWMM and the GIS-based Pollution Load Screen Model (PLSM) were used for performing water quantity and water quality evaluations.

Stormwater Master Plan, Town of Melbourne Village, FL – Provided technical services to develop a stormwater master plan for the Town. Work performed included an evaluation of present hydrologic/hydraulic conditions of the stormwater management system as well as stormwater quantity and quality, nonpoint source pollutant loadings, best management practices (BMPs), and current water quality conditions. Alternatives to correct flooding and water quality problems were developed and evaluated. Recommendations included a capital improvements program, non-structural BMP implementation, NPDES Phase II compliance, and ordinance and regulatory modifications.

SW 4th Street Watershed Stormwater Master Plan, City of Ocala, FL – Project engineer responsible for preparing a water management plan for the City's SW 4th Street watershed. Activities included system modeling using the EPA Stormwater Management Model (SWMM) and the preliminary design of improvements to the existing drainage system to alleviate flooding problems and improve water quality treatment of stormwater.

Drainage Master Plan Update and FEMA LOMR Application Support, Gainesville Regional Utilities, Alachua County, FL – Updated a drainage master plan for the 1,100-acre Deerhaven Generating Station (DGS) using ICPR3 and prepared an application and supporting documentation for a FEMA Letter of Map Revision (LOMR).

Statewide TMDL and Stormwater Quality Technical Support, FDOT Central Office – Providing technical support regarding proposed EPA and FDEP TMDLs, Basin Management Action Plans (BMAPs), proposed surface water quality standards and the proposed Florida Statewide Stormwater Treatment Rule. Work performed includes review of TMDL reports and supporting modeling and statistical analyses, evaluation and testing of water quality models including HSPF, LSPC+, WASP7 and EFDC and statistical analyses of flow and water quality data.

Stormwater Management System Design and Permitting, Vac-Con, Inc., Green Cove Springs, FL – Prepared stormwater management calculations (ICPR) and plans to support expansion of the Vac-Con facility. Work performed includes stormwater management design and ecological assessments to support preparation and submittal of an Environmental Resources Permit Application and Clay County Development Permits.

Alligator Lake/Clay Hole Creek Watershed Flood Management Plan, Columbia County, FL – Used HEC-HMS and HEC-RAS (unsteady flow option) to perform hydrologic and hydraulic assessments in support of a study to develop flood mitigation alternatives. Scenarios evaluated included the September 2004 hurricane events (Frances and Jeanne) and the 100-year, 24-hour storm. Using the constructed models, performed a level-of-service (LOS) assessment for retention facilities within the Eastwood Sub-division located adjacent to Clay Hole Creek.

Anne C. Kitchell, LEED AP

Senior Environmental Planner, Project Manager

Areas of Expertise

Stormwater Management
Watershed Planning
Coastal Resources
Green Infrastructure

Professional Registrations

LEED-AP
CEPSCI (South Carolina)

Academic Background

Masters of Marine Policy,
University of Delaware

Bachelor of Science,
Marine Science,
University of South Carolina

Bachelor of Science,
Biology, University of South Carolina

PROFESSIONAL EXPERIENCE

Horsley Witten Group,
Senior Environmental Planner, 2008 to present

Center for Watershed Protection, Program Manager, 2001 to 2008

SC DHEC, OCRM, graduate intern, 2000

Water Resources Agency, University of Delaware, 1999 to 2001

Pritchard's Island, USC, Sea Turtle Conservation Project Coordinator/Marine Educator, 1995 to 1998

Anne has 15 years of practical experience in watershed and stormwater management, MS4 stormwater program evaluations, technical training, pollutant load modeling, and stakeholder facilitation. A former program manager for the Center for Watershed Protection, Anne has authored several publications related to watershed restoration and stormwater management and has developed dozens of coastal watershed plans around the country and throughout the Pacific and Caribbean territories to meet TMDL targets, protect drinking water supplies, and restore impaired waters. Anne has extensive experience working with MS4 jurisdictions to build program capacity. She is one of HW's primary providers of technical trainings for public and private sector practitioners on stormwater planning, sustainable stormwater funding, and implementation of restoration priorities. Prior to joining HW, Anne was a Beaufort County resident who enthusiastically paid her stormwater utility fee. She could frequently be seen on the streets of Beaufort, Port Royal, and Hilton Head installing storm drain markers, popping manholes, and conducting random inspections of existing BMPs. She has previously worked on stormwater-related projects with the Town of Bluffton, Edisto Beach, Jasper County, Beaufort County, and Richland County, SC, as well as the City of Savannah, GA.

REPRESENTATIVE PROJECTS

Supporting New England, EPA Region 1 Small MS4 Stormwater General Permit: The pending MS4 permits in Massachusetts and New Hampshire are arguably some of the most progressive in the Country. Anne conducted training clinics to educate regulated communities on the new permit requirements and developed technical documents for calculating directly-connected impervious area, assessing local codes, retrofitting, and illicit discharges that can be found at <http://www.horsleywitten.com/MS4-LID-training/>.

Climate-ready Stormwater BMP Designs: Evaluated over 40 coastal stormwater facilities including infiltration practices, bioretention, swales, and proprietary practices to determine potential impacts of rising sea levels, increased ground water elevations, and exposure to storm damage. BMP design recommendations for coastal BMPs will be developed for areas mapped as susceptible to climate change.

Drafting Stormwater Bylaw – Brewster, MA: As part of the Integrated Water Resource Management Planning effort, Anne is drafting a new stormwater bylaw and regulation for stormwater management to address provisions of the pending MS4 permit, and local water quality objectives.

Sustainable Stormwater Financing to Meet the Charles River Watershed TMDL: Anne worked on an evaluation of stormwater program and capital costs for three regulated MS4 communities to implement widespread stormwater control measures to meet TMDL requirements. For the final feasibility report, go to www.epa.gov/region1/npdes/charlesriver/index.html#SSFP.

USVI Environmental Handbook Update: Currently working with a Stormwater Working Group comprised of the VI Dept. of Planning and Natural Resources, NOAA, EPA, USDA, local engineers, builders, and environmentalists to develop stormwater standards and design manual. The regulatory standards are the first to be adopted for the island.

Stormwater Planning to Meet Flow-Based TMDL, VT: Identified stormwater retrofits to meet high and low flow-based TMDLs for Centennial, Monroe, and Englesby Brook Watersheds in collaboration with the relevant MS4s. Efforts include field identification, conceptual design, and modeling of structural practices to meet the flow restoration targets using the Vermont BMP Decision Support System model.

Anne C. Kitchell, LEED AP

Senior Environmental Planner, Project Manager

Horsley Witten Group
Sustainable Environmental Solutions



Evaluation of Green Infrastructure Strategies in New York City: Project Manager to evaluate the capacity of stormwater BMPs to reduce CSOs. This initial project involved the siting, design, construction, and monitoring of green infrastructure BMPs. Efforts now include widespread implementation of road-right of way retrofitting in sewersheds throughout the city with the Office of Green Infrastructure.

Retrofitting the Maine Mall, Long Creek Watershed: Project manager working with the Long Creek Watershed Management District to site, design and implement stormwater retrofits on one of the last commercial properties in Long Creek. Project involves retrofitting existing detention basin to a gravel wetland system, as well as a number of parking field retrofits to improve water quality, pedestrian safety, and aesthetics at the Maine Mall. An inventory of over 450 trees was completed and the benefits (e.g., energy, air quality, stormwater) canopy cover was modeled using i-Tree tools.

Implementing LID to Meet an Impervious Cover TMDL, CT (2010): Identified stormwater retrofit opportunities to manage > 90 acres of imperviousness on UConn campus to meet the country's first impervious cover-based TMDL. The application of LID techniques in the Eagleville Brook Watershed is a challenge given the high density of land use, extensive soil compaction and alteration, and limited parking. Projects were prioritized based on cost/benefit analysis and feasibility with master campus planning.

Facilitating Stakeholder Engagement for River Basin Commissions: Primary facilitator for NOAA NWS workshops in four River Basins to generate project ideas to demonstrate new technical capabilities of a NOAA, Army Corps, and USGS collaborative to help water suppliers and other river basin stakeholders model and predict water quality, water availability, and other issues related to climate change.

Stormwater Manual and Ordinance, Jasper County, SC: Based on experience developing the Georgia Coastal Stormwater Supplement, Anne provided technical support and review services to Thomas and Hutton on overarching stormwater criteria, BMP design and maintenance elements, and the stormwater ordinance.

Stormwater Program Evaluation in Bluffton, SC: Evaluated existing stormwater program capacity for both post-construction and erosion and sediment control with the Town of Bluffton. Provided range of options for program enhancements and stormwater standards for local consideration.

Pollution Prevention Planning and Stormwater Management in Edisto Beach, SC: While at the Center for Watershed Protection, Anne conducted a pollution prevention inventory and stormwater program capacity evaluation for the Town of Edisto Beach, SC. A number of programmatic recommendations, as well as structural stormwater retrofit concepts were provided to the Town.

Improving Stormwater Management in Horry County, SC: Anne assisted Coastal Carolina University in development of a watershed plan for the Kingston Lake Watershed. The project involved evaluation of local development codes and stormwater regulations for Conway and Horry County, as well as inventorying stormwater outfalls, assessing ditching impacts, and identifying retrofit and buffer reforestation opportunities.

Southeast Stormwater Institute, EPA OWOW: Technical program coordinator and logistics planner for the Stormwater Institute in Savannah GA-- the first to target MS4 program managers in EPA Region 4. The curriculum was based on each of the NPDES stormwater minimum measures.

YEARS OF PROFESSIONAL EXPERIENCE:

Total: 31
ATM: 20

AREAS OF SPECIALIZATION

- Multidimensional circulation, transport and water quality modeling and analyses of watersheds, rivers, lakes, estuaries, offshore and beach processes.
- Design and implementation of hydrodynamic and water quality monitoring programs in support of circulation, transport and water quality studies.
- Modeling and analyses in support of Total Maximum Daily Load (TMDL) Evaluations, Environmental Impact Studies, Marina ERP Permitting, NPDES Permitting, and design alternative evaluation.
- Watershed and stormwater water quality master planning and implementation.

EDUCATION

Ph.D. 1995 Coastal and Oceanographic Engineering, University of Florida

M.S. 1987 Coastal and Oceanographic Engineering, University of Florida

B.S. 1982 Civil Engineering, Lehigh University

AFFILIATIONS

- Florida Stormwater Association (FSA)
- Southeast Stormwater Association (SESWA)
- Water Environment Federation (WEF)
- Water Environment Research Federation (WERF)

SUMMARY OF QUALIFICATIONS

Dr. Peene's expertise is in water resources analysis, including watershed planning, evaluation of non-point and point source pollution in surface water systems, hydrologic and water quality modeling for lakes, rivers, estuaries, coastal embayments and offshore, evaluation of impacts to ecological resources in surface waters, and design and implementation of hydrodynamic and water quality monitoring in surface water systems. Dr. Peene is experienced in the management and coordination of large interdisciplinary projects involving public and agency participation.

Dr. Peene has been involved in the national and local evaluation of impacts to surface waters including development of Total Maximum Daily Loads (TMDL), Stormwater and Watershed Master Plan Development, and Ecosystem Restoration Projects. He has worked with EPA Region IV on the development of TMDLs in the southeast since 1996, and with the Region IV TMDL coordinator in development of long-term planning and completion of hydrodynamic and water quality models, as well as design and implementation of water quality monitoring programs for use in TMDL development within the southeast States. He works closely with numerous cities, counties, and Florida Department of Transportation (FDOT) to provide technical support on water quality issues [with specific emphasis on water body listing, TMDLs and Basin Management Action Plans (BMAPs)] in Florida.

PROJECT EXPERIENCE

Review of Beaufort County Stormwater Master Plan, SC – Provided technical review of the watershed and receiving water modeling utilized in the development of the Stormwater Master Plan for the County.

Tyger River Wasteload Allocation Modeling, SC - ATM is working to locate a new wastewater discharge into the Tyger River in support of a \$1.0 billion dollar industrial development in Upstate South Carolina. Work includes determination of potential discharge locations on the Tyger River, review of industrial waste streams, applicable State and Federal regulations and development of a QUAL2E Wastewater Wasteload Allocation model for determination of potential future discharge permit limits.

Cooper River BLTM Model Review – Under contract with the Cooper River Water Users and the Charleston Public Works Department, reviewed the application of the Branch Lagrangian Transport Model (BLTM) to the Cooper River, and its applicability to the determination of a TMDL for the system. Coordinated with personnel of the SCDHEC Water Quality Modeling Section for the model review, which resulted in SCDHEC acceptance of an alternate modeling tool for the Cooper River evaluation.

FDOT SWMP Development, FL – Principal in charge for the development of a statewide Stormwater Management Plan (SWMP) for FDOT. The Management Plan defines the statewide protocols for FDOT in relation to Stormwater Management under FDOTs Phase I permits, including inspection and maintenance, public education, storm water treatment, etc.

Wastewater Treatment System, Richmond Hill, GA - Project Manager on a study to determine the impacts of a proposed wetland treatment system discharge onto a tidal

tributary of the Ogeechee River. The study included design and implementation of a hydrodynamic and water quality monitoring program and application of a hydrodynamic and water quality model to determine expected levels of nutrients, dissolved oxygen and sediments within the receiving waters.

Daniel Island Dissolved Oxygen Study, Charleston, SC - Task manager on a study to analyze the impacts of discharging treated effluent into an un-named creek connecting the Wando and Cooper Rivers on Daniel Island. Applied 1-D dynamic branch water quality model RECEIV-II to quantify the longitudinal distribution of dissolved oxygen under the proposed conditions. Study presented to and approved by the South Carolina Department of Health and Environmental Control.

Daniel Island Wastewater Master Plan, SC - Project Manager on a study to determine the assimilative capacity of the Charleston Harbor Estuary in Charleston. The study area included the main harbor, the Wando River, the Ashley River, and the Cooper River up to the Pinopolas Dam. Prepared a hydrodynamic and water quality monitoring program for calibration and verification of the water quality and transport model WQMAP. Utilized transport model to evaluate the impacts of increased or additional discharges to the Cooper River on the levels of nutrients, BOD, metals and sediments within the receiving waters. Results from the study determine the Total Maximum Daily Loading (TMDL) for the entire Charleston Harbor Estuary with primary focus on the Cooper River. Model application prepared as a cooperative effort between ATM and the SCDHEC Water Quality Modeling Section.

TMDL Toolbox Development – Project Manager responsible for development of a series of models, databases, and analyses tools for TMDL development within Region IV. The toolbox is a series of stand-alone models capable of addressing hydrologic, hydrodynamic and water quality conditions within watersheds, rivers, lakes, estuaries, coastal embayments, and offshore.

TMDL Support for State of Tennessee, TN – Project Manager for development of a 10-year plan for the state to meet its consent decree requirements for completion of TMDLs within waters listed under the 1998 303(d) listings. Implemented first phase of 10-year plan to complete year 2000 and 2001 TMDL commitments on the Stones and Harpeth Rivers.

TMDL Support for State of Alabama, AL – Project Manager for development of a 10-year plan for the State to meet its consent decree requirements for completion of TMDLs within waters listed under the 1998 303(d) listings. Implemented first phase of the plan to complete year 2001 TMDL commitments within the northern region of the State.

TMDL/BMAP/NPDES Support for FDOT, FL – Principal in charge for continuing services contract with FDOT to provide support statewide on TMDL, NPDES and water quality issues. Specific work includes assessment and technical review of potential water body impairment listing impacting FDOT, assessment and review of TMDLs potentially impacting FDOT, assessment and technical review of BMAP allocations through TMDL implementation to assure load reductions assigned to FDOT are fair and equitable, development of alternative TMDLs and BMAP allocations, coordination and interaction with FDEP and EPA on behalf of FDOT and review and comments on proposed water quality regulations that may impact FDOT, including specific work on numeric nutrient criteria.

TMDL Support for Hillsborough County, FL – Principal in charge for the development of a countywide TMDL plan to address issues raised by recent TMDLs proposed by FDEP and EPA. Worked with the County to develop technical comments to draft TMDLs and represented the County at FDEP hearings.

TMDL Support for Brevard County, FL – Principal in charge for the development of a TMDL Audit for Brevard County, FL. The TMDL Audit identified present and future TMDL issues throughout the County, evaluated the potential impacts based upon overall costs and timing, and developed a two-year action plan to be implemented by the County. Ongoing support was provided to Brevard County on listing, TMDL, and BMAP issues throughout the County. The project included working with Brevard County and numerous adjacent cities in redoing TMDLs within the Northern Indian River Lagoon, Central Indian River Lagoon, and Banana River.

YEARS OF PROFESSIONAL EXPERIENCE:

Total: 14
ATM: 13

AREAS OF SPECIALIZATION

- Coastal and Ocean Engineering
- Physical and Biological Oceanography
- Permitting and Comprehensive Environmental Studies
- Environmental Impact Assessments and NEPA support
- Endangered Species Formal Consultations
- FEMA Flood Zone Analysis and Remapping
- Hydrodynamic Modeling
- Water Quality Modeling
- Wave Modeling
- Shoreline Erosion Modeling
- Coastal Processes and Sediment Transport Modeling
- Fisheries, Wetland and Biological Studies
- Data Collection and Statistical Analysis
- Data Mining

EDUCATION

M.S., Ocean Engineering, Texas A&M University, 2000

B.S., Biology, Boston College, 1993

PROFESSIONAL REGISTRATIONS

- Professional Engineer, South Carolina, No.27831, 2009

AFFILIATIONS

- SC Seagrass Advisory Committee (2009-2011)
- SC Shoreline Change Advisory Committee (2008-2010)

SUMMARY OF QUALIFICATIONS

Mr. Way provides hydrodynamic, water quality, flushing, watershed, sedimentation, and acoustic, artificial neural network, shoreline, and wave modeling as well as field data collection, data mining, statistical and time series analyses. He is proficient in various surface water hydrodynamic, hydrologic, hydraulic and water quality models including:

- EFDC (2-D and 3-D hydrodynamics and sediment transport)
- WASP (for water quality)
- Coastal Modeling System (CMS) (wave, hydro, sediment transport)
- STWAVE/SWAN/CGWAVE (wave propagation)
- SSFATE (dredge plume simulation)
- GENESIS (shoreline evolution)
- SBEACH (cross-shore sediment transport)
- Artificial Neural Network – Matlab
- GIS Model Applications (Flood Mapping)

PROJECT EXPERIENCE

Stormwater Design Analyses for the County Stormwater Ordinance, Beaufort County, SC – Performed data processing and analysis of historical precipitation records to develop stormwater design criteria.

Ashley River Water Quality Study, Charleston, SC – Ran a previously developed BLTM water quality model to evaluate sensitivity to different inputs. Also analyzed measured DO, temperature, flow, BOD, NH3, ON, etc. during dry and wet conditions in order to evaluate point and non-point impacts. Also evaluated watershed delineations.

Paradise Island Project EIA, Nassau, Bahamas – Performed hydrodynamic and water quality analyses of proposed lagoon modifications and proposed artificial fish habitats for an EIA associated with development of the resort facility. Work included analysis of collected flow, tide and water quality data; hydrodynamic and water quality modeling of the proposed lagoon modifications; analysis of a tide gate structure with hydraulic pumps to increase circulation and flushing within the lagoon. Hydrodynamic model (WQMAP), water quality model (WASPS) and surface water model (PLUMES) were applied.

Savannah Harbor Expansion, Savannah, GA – Assisted in the application and calibration of a 3-D hydrodynamic, salinity and temperature model to the Savannah River Estuary. Performed analysis of salinity, salinity gradients, water surface elevation, temperature gradients, currents, salt flux and volume flux for modeled and measured data. Performed water quality modeling with WASP to predict changes in Dissolved Oxygen and establish a TMDL for the Savannah River. Developed a Marsh Succession Model.

Also performed a tidal harmonic analysis of historic water levels and performed research in order to quantify effects of sea level rise, land subsidence, and tidal amplification near the city of Savannah. Collected salinity, water quality, and marsh

data. Developed Artificial Neural Network (ANN) that linked River Model output to Marsh data and future impacts.

Beef Island Golf Course and Resort Environmental Impact Study, British Virgin Islands – Developed a comprehensive environmental impact assessment for a golf course and resort project. This entailed describing existing and proposed conditions for a complete spectrum of issues (natural, physical, human, economic, etc.). Golf course management concerns (runoff, pesticides, fertilizer, etc.) were emphasized.

Mixing Zone Establishment, Hillsborough County, FL – Provided mixing zone modeling and analysis for the River Oaks Advanced Wastewater Treatment Facility (AWWTF) for bromodi- chloromethane (a byproduct of disinfection). The mixing zone report was submitted to FDEP and allows the AWWTF to maintain existing levels of treatment and prevent major capital expenditures for upgrades.

TMDL Support for Hillsborough County, FL – Worked with the County to develop technical comments to draft TMDLs. Recently successful in putting in abeyance Rulemaking by FDEP for a TMDL on Baker Creek/Mill Creek that identified unreasonable load reductions that would have impacted the County.

TMDL Support for FDOT, FL – Provided statewide support on TMDL issues. Under the contract a Statewide TMDL plan was developed that identified actions to be taken by FDOT over a two-year window to assure that TMDLs proposed and load allocated assigned to FDOT are fair and equitable. Developed technical comments on draft TMDLs proposed by FDEP and EPA.

TMDL Support for Pasco County, FL – Worked with the County to develop technical comments to draft TMDLs. Recently successful in putting in abeyance Rulemaking by FDEP for a TMDL on Trout Creek which identified unreasonable load reductions that would have impacted the County.

Numeric Nutrient Criteria (NNC) Support for FDOT, FL – Provided support on EPA and FDEP NNC proposed rules that would affect many Florida water bodies. The NNC rules were primarily targeted to reducing total nitrogen and total phosphorous; and the underlying analysis and application of the proposed NNC rules required extensive technical review and commenting. Commenting focused on technical flaws and deficiencies in the data and analysis.

Tidal Caloosahatchee TMDL Review and Model Verification – Provided detailed technical review of the model used by FDEP to develop the Tidal Caloosahatchee nutrient TMDL. Work included verification of model input and output and preparation of a detailed report on model deficiencies.

NPDES Technical and Permitting Support for Spartanburg County, SC – In response to a proposed stricter copper discharge limit by the state, a detailed review and analysis of the state's data and methods was conducted. This review and analysis proved successful in maintaining the copper limit and in removing this area as an impaired water for copper.

Gills Creek TMDL Technical Review and Analysis, City of Forest Acres, SC – Provided TMDL support to the City by reviewing and commenting on all TMDL documents, modeling and supporting information.

Marina Basin Flushing Analysis, Norman's Cay, Exuma, The Bahamas – Developed an EFDC numerical model for pre- and post-project conditions in order to assess flushing characteristics of a proposed marina basin. Model was calibrated to gage data that were also deployed by ATM.

Ocklawaha River Modeling, St Johns River Water Management District, FL – Developed an EFDC hydrodynamic model for a 30-mile reach of the Ocklawaha River where overbank flooding occurs regularly. Modeled existing conditions as well as proposed restoration conditions that include dam removal.

FEMA Flood Zone Remapping, Several Sites in SC – Re-analyzed and remapped numerous existing FEMA flood zones at a specific project site in order to move the property from a VE zone to an AE zone. Analysis includes review of existing FEMA FIRM, rerunning FEMA wave model based on updated topography. Develop and submit application for a Letter of Map Revision (LOMR) to FEMA.



Dr. Robert Roseen, PhD., D.WRE, P.E.

Sr. Project Manager/Practice Leader

Areas of Expertise

Natural Resources Assessment and Restoration
Watershed and Stormwater Management
Climate Change Resiliency
Erosion and Sediment Control
Water Resources Engineering
LID Design and Study
Hydrology and Hydraulic Evaluations
Land Use and Pollutant Load Studies

Professional Registrations

Professional Engineer, NH No. 12215

Professional Engineer, MA

Diplomate of Water Resources Engineering, American Academy of Water Resources Engineers, 00556

Academic Background

Ph.D., Civil Engineering, Water Resources Engineering, University of New Hampshire, 2002

M.S., Environmental Science and Engineering, Colorado School of Mines, 1998

B.A., Environmental Science/Chemistry, Clark University, 1994

Dr. Roseen is a recognized industry leader in green infrastructure and watershed management, and the recipient of an Environmental Merit Award by the US Environmental Protection Agency Region 1. Dr. Roseen consults nationally and locally on stormwater management and planning and currently leads one of the first-in-the-nation Integrated Planning efforts in coastal New Hampshire. He directed the University of New Hampshire Stormwater Center for 10 years and is deeply versed in the practice, policy, and planning of stormwater management. Rob has 20 years of experience in the investigation, design, testing, and implementation of innovative approaches to stormwater management. His broad area of expertise includes water resources engineering, stormwater management, low-impact development (LID) design, and porous pavements. Rob has led the technical analysis of several studies examining land use and climate change impacts upon municipal flooding. He has participated in many significant and award winning green infrastructure projects.

REPRESENTATIVE PROJECTS

Integrated Permitting Framework for the Squamscott-Exeter River Watershed: Dr. Roseen is leading a team that developed the foundation for an Integrated Plan for three coastal communities in the seacoast region of New Hampshire. The goal of the plan is to help these communities meet new, more stringent wastewater and stormwater permit requirements for nutrients, improve water quality in the Squamscott River and Great Bay, and support the economic viability of the participating communities. The Plan provides the communities with the necessary information to make long-term financial commitments and planning decisions and to communicate to the public essential information that was developed jointly.

Stormwater Regulatory Program Experience: Dr. Roseen has been leading a team with the City of Rochester, New Hampshire as part of a 3-year stormwater engineering contract to provide services to support their MS4 operations and planning. A diverse array of services are provided including nutrient management planning for stormwater and wastewater, stormwater ordinance and planning regulations development, stormwater master planning, MS4 auditing for the 2003 permit, planning and preparation for the 2013 Draft MS4 permit, assistance with developing funding mechanisms to support the municipal program, stream restoration, asset inventory and assessment for drainage infrastructure, operations and management plan preparation, and GIS database development, to name a few.

Climate Adaptation Plan for Exeter, New Hampshire: Since the spring of 2013, Dr. Roseen has been the Technical Lead for a drainage infrastructure study to develop a Climate Adaptation plan for Exeter, New Hampshire. This includes examining flooding, municipal resiliency, and water quality in relation to land use and climate change for current and future scenarios. The project is a collaboration of many Project Team members from climate change scientist, planners, floodplain managers, communication specialists, lawyers, and stakeholder representatives. The project goals are to, 1) develop a science-based, integrated climate change adaptation strategy for this part of Exeter, and 2) implement, evaluate, and document the collaborative planning process and share the project results as a model for the region.

Analysis of Flood Damage Cost Avoidance in the Lamprey River Watershed: Beginning in the spring of 2015, Dr. Roseen will lead the Technical analysis in partnership with



Dr. Robert Roseen, PhD., D.WRE, P.E.

Sr. Project Manager/Practice Leader

**PROFESSIONAL
EXPERIENCE**

Horsley Witten Group,
Newburyport, MA,
2015- Present
Geosyntec
Consultants, Inc.,
Acton, MA, 2012 –
2015

University of New
Hampshire, Research
Assistant Professor,
Durham, NH, 2007 –
2012

UNH Stormwater
Center, Director,
Durham, New
Hampshire, 2004 –
2012

University of New
Hampshire, Research
Project Engineer III,
Durham, NH, 2001 –
2007

The Bioengineering
Group, Inc., Salem,
MA, 2001 - 2004

the University of New Hampshire for a flood damage and cost avoidance study in Newmarket, New Hampshire. We plan to develop and deliver a training program for municipal officials and regional planners on the key findings from our previous work (new 100-year flood plan maps and legal analysis) as well as the results from our new flood damage analysis. We will also collaborate with a group of local and national communication experts to develop and implement audience-specific, innovative, and integrated plans to communicate both the risk of climate change and cost avoidance benefits of land use management decisions and their contribution to resiliency.

Low Impact Development and Community Resilience to Climate Change in a Coastal NH Community: A study led by Wake, Roseen, et al (2013) developed new information layers for theoretical 100-year flood plains by examining a 40 year build-out by conventional zoning in contrast with Low Impact Development zoning and flood mitigation benefits. This information was used to support municipal decision making for the communities within the watershed on implementing climate adaptation measures through zoning and planning.

Commercial Street Porous Pavement Design, Provincetown, Massachusetts: Beginning in 2009, Dr. Roseen was the technical expert for a project team led by GHD on porous pavement design for the construction of over 1 mile municipal roadway. The project addressed existing infrastructure problems with flooding and drainage along a main thoroughfare that had tremendous traffic during the busy tourist season. The design evaluated the structural load capacity of the proposed road base, the geotechnical suitability of the native soils, and the potential impacts of hydraulic loading upon the groundwater table and hydraulic mounding. The design also helps Provincetown address their need to manage stormwater and beach impairments which occur from the discharge of untreated runoff from many outfalls by fully managing runoff from a highly trafficked section of Commercial Street and rooftop runoff from adjacent buildings.

Long Creek Watershed Management Team: Dr. Roseen was a recipient of an Environmental Merit Award as a participating member in the Long Creek Watershed Management Team that was awarded by the US Environmental Protection Agency Region 1 in 2010. This involved the development of the Watershed Management Plan, and in particular the usage of LID stormwater management. Dr. Roseen has collaborated with the Maine Department of Environmental Protection, the Department of Transportation, and the LCWMD in the implementation, monitoring, and maintenance of LID management measures including bioretention, gravel wetlands, tree filters, and the first installation of a high-use state roadway using porous asphalt in the northeastern United States.

Berry Brook Watershed Restoration Project: In 2010, Dr. Roseen, leading a team at UNH in partnership with the City of Dover, implemented water quality and stream restoration improvements in the Berry Brook Watershed for NHDES and ACOE. Berry Brook is a 0.9 mile long stream in a 164 acre watershed in downtown Dover and is impaired for aquatic habitat and primary contact recreation. Through a series of grants and matching funding from the City valued at over \$1 million, this project implemented major recommendations from the Watershed Management Plan, and achieved near predevelopment hydrology and the reduction of effective impervious cover to ~11%.



Michelle L. West, P.E.

Project Manager – Water Resources Engineer

Areas of Expertise

- Smart Growth
- Watershed Planning & Assessment
- Geographic Information Systems
- Civil Engineering
- Environmental Engineering
- Stormwater Management
- Low Impact Design
- Training

Professional Registrations

Professional Engineer, MI

Professional Affiliations

Member, Conservation Commission, Town of Falmouth, 2007 to 2013

Academic Background

Bachelor of Science, Engineering, Civil and Environmental Engineering, University of Michigan

Bachelor of Science, Natural Resources and Environment, University of Michigan

Master of Science, Engineering, University of Michigan, College of Civil and Environmental Engineering

PROFESSIONAL EXPERIENCE

Horsley Witten Group, Inc., Project Manager, August 2005 to Present

Ayres, Lewis, Norris, &

Michelle West has thirteen years of professional experience in civil and environmental engineering. Her specific expertise is in stormwater management, watershed planning, hydraulic/hydrologic modeling, and low impact development (LID) planning, assessment, design, and implementation. She has prepared materials for and presented at several technical training workshops on stormwater issues, LID, and erosion and sediment control (ESC). She also has experience with public education and outreach, particularly as part of municipal NPDES Phase II stormwater plan implementation, as well as with geographic information system (GIS) mapping, analysis, and modeling.

REPRESENTATIVE PROJECTS

Rhode Island Stormwater Design and Installations Manual Update and LID Site Planning and Design Guidance for Communities: Lead Engineer for this project that updated the statewide Rhode Island Stormwater manual to incorporate LID practices for all new and redevelopment projects. This strategy integrated site design criteria with structural stormwater practices for the first time to create a comprehensive stormwater management approach. She developed and presented training workshops for agency staff, as well as for engineers and developers, to describe the new manual and introduce new concepts. She also helped prepare a companion guidance document for Rhode Island municipalities that facilitates the implementation of LID at the local level.

Vermont Agency of Natural Resources, Update to Statewide Stormwater Management Manual: Project manager for technical support as a subconsultant to Stone Environmental, Inc. for the update of the 2002 Vermont Stormwater Management Manual. The purpose of the update is to incorporate low impact development (LID)/green infrastructure (GI) practices, runoff reduction criteria and other updates as appropriate to reflect evolution of stormwater management in the last decade. Michelle has also helped lead workshops throughout the update process to obtain feedback from key stakeholders on proposed changes.

Guam/CNMI Stormwater Management Design Manual: HW developed sizing criteria and a design guidance manual for managing construction and post-construction stormwater runoff for the U.S. Territory of Guam and the Commonwealth of Northern Mariana Islands. Michelle was the lead engineer for the manual, creating island-specific design guidance and preparing case studies of local projects to illustrate design calculations and techniques. She also conducted several training workshops for local regulators, engineers, and developers, which included a certification exam.

Ordinance and Regulations Update Project and Peer Reviews, City of Attleboro, MA: Prepared a stormwater management ordinance and regulations and updated the subdivision regulations to incorporate smart growth and LID principles to effectively manage and treat stormwater city-wide. The new stormwater regulations integrate site design criteria with structural practices to create a comprehensive stormwater management approach. Michelle also performs stormwater peer reviews for applications submitted to the Conservation Commission and Planning Board, and has provided training on LID for City staff and board members.

Stormwater Regulations Audit, Town of Bristol, RI: Performed an audit of the Town's Soil Erosion, Runoff, and Sediment Control Ordinance and Subdivision and



Michelle L. West, P.E.

Project Manager – Water Resources Engineer

May, Inc., Senior Engineer,
2002 to July 2005

Development Review Regulations. Provided recommendations on code revisions to encourage low impact design techniques and improve stormwater management throughout the town.

Green Infrastructure Implementation Strategy, Town of Franklin, MA: Project manager for this project funded by USEPA that developed a strategy for the Town for implementing green infrastructure into their existing and future projects, programs and policies. This project also involved conducting a code audit identifying existing barriers to green infrastructure implementation, as well as quantifying the benefits of recent green infrastructure projects in Franklin.

LID Regulations, Hingham, MA, Charlestown, RI and New London, NH: Reviewed existing language and incorporated LID practices, strategies, and standards into Subdivision Rules and Regulations. Focused on submittal requirements for proposed subdivisions in Hingham while concentrating mainly on stormwater and erosion control requirements and LID best management practices (BMPs) for Charlestown and New London.

NPDES Stormwater Phase II Compliance and Management Plans for Charter Township of Northville, City of Wayne, Ann Arbor Charter Township and Lodi Township, MI: Developed Five-Year Stormwater Management Plans in compliance with the NPDES Stormwater Phase II Regulations. Educated key City and Township officials on the NPDES Stormwater Phase II regulations and implemented public education and involvement programs.

Chepachet Village Integrated Water Management Planning and Design, Gloucester, RI: Michelle was a Project Engineer for this village-scale wastewater and stormwater management study in Chepachet Village, Gloucester, RI. The goal of this study was to resolve existing water management issues, using neighborhood-scale solutions designed to address flooding and water quality issues. Michelle developed a conceptual design of innovative stormwater solutions for village roadways, incorporating grassed swales, bioretention systems, infiltration basins, and wet vegetated treatment systems into the existing stormwater management system. In 2012, the wet vegetated treatment system concept was fully designed and constructed, integrating stormwater management with the surrounding parkland, historical sites, and wetland areas.

Walton's Cove Stormwater Mitigation Project in Hingham, Massachusetts: Project manager for this watershed assessment and stormwater retrofit design project aimed at improving water quality and habitat in the impaired Walton's Cove. Both structural and non-structural practices were identified, evaluated, and prioritized. The three top-ranked structural retrofits were advanced to 30% design, which the Town will use for grant applications and road improvement project planning. The retrofits included green infrastructure practices such as bioretention facilities, porous pavement, and green street designs sized to account for larger storm events and expected sea level rise as a result from climate change.

YEARS OF PROFESSIONAL EXPERIENCE:

Total: 32
ATM: 12

AREAS OF SPECIALIZATION

- Hydrologic Studies
- Water Quality Studies
- Sediment Sampling
- Habitat Assessments
- Flood Evaluations
- NPDES Compliance
- TMDL Development
- Erosion Evaluation and Control
- Permitting and Construction

EDUCATION

M.S., Coastal and Oceanographic Engineering, University of Florida, 1987

B.S., Civil Engineering, Oregon State University, 1981

PROFESSIONAL REGISTRATIONS

- Professional Engineer, Florida No. 47110, 1993
- Florida Supreme Court Certified County Court Mediator

SUMMARY OF QUALIFICATIONS

Ms. Hearn is a senior water resources/coastal engineer with experience designing and executing hydrologic, water quality and sediment sampling studies in both freshwater and ocean environments. Study results have been used for instream habitat assessments, flood evaluations, impact assessments and determination of compliance with NPDES permits. She is very knowledgeable about and involved with the TMDL and BMAP programs in Florida and serves as a technical advisor, liaison and advocate for a number of government clients.

PROJECT EXPERIENCE

Florida Department of Transportation (FDOT) Statewide TMDL Plan, FL – Project manager in charge of development of a comprehensive Statewide TMDL Plan for the FDOT. By providing details regarding the present status and future development schedule of TMDLs, the plan allows the FDOT to engage throughout the TMDL process, from the listing of water bodies through TMDL implementation, thus ensuring that their interests are adequately represented and allocations are justifiable and fair.

Review of Proposed Statewide Stormwater Rule for FDOT, FL – Project manager for ongoing reviews of revisions and updates to Florida's proposed Statewide Stormwater Rule. In addition to providing general comments on drafts, specific tasks include detailed review and assessment of the basis for highway EMC values and nitrogen removal efficiencies included in the rule and used for permitting.

TMDL, BMAP and Water Quality Support for Lee County, FL – Project manager for review of EPA and FDEP TMDL documents affecting Lee County and for review of nutrient load allocations and calculation of nutrient reduction credits for implementation of the TMDLs through the Basin Management Action Plan (BMAP process). Coordinated with FDEP on development of TMDLs for Caloosahatchee River tributaries TMDLs. ATM's recommendation to utilize a more robust and scientifically justifiable alternative to FDEP's load calculation methodology for the Hendry Creek and Imperial River BMAPs resulted in a *potential savings to Lee County of tens of millions of dollars* by decreasing required total nitrogen reductions by 73 percent. Works with the County to review proposed impaired waters listings and provides technical support for the County's MS4 permit.

TMDL Support for Brevard County, FL – Project manager for preparation of a TMDL/BMAP Audit and Risk Assessment and GIS database. Identified and mapped status of water body impairments and TMDL and BMAP development for all watersheds in the county. Used audit results to identify TMDL/BMAP activities with potential for future impacts on capital

expenditures and recommended specific action items to minimize and manage risk.

TMDL and Water Quality Support for FDOT, FL – Project manager for comprehensive water quality, TMDL and BMAP support services to the FDOT, including detailed technical review of methodologies used by EPA and FDEP to develop TMDLs and preparation of written comments; review of water quality data used by FDEP to support listing of water bodies as impaired; development of detailed waterbody assessment reports; maintenance of a comprehensive statewide TMDL database; monitoring of TMDL implementation plans statewide; and participation in development of TMDL implementation plans.

Rural Highway Stormwater Sampling, FDOT, FL – Project manager in charge of development and execution of a stormwater sampling plan for five rural roadway sites. Primary study objective was to determine event mean concentrations of nutrient and metal parameters specifically for road land use. Such data can be used to determine actual pollutant loadings and TMDL allocations for FDOT right-of-ways.

Outfall Monitoring to Support MS4 Permit for FDOT District 1, FL – Designed sampling setup and protocol for outfall monitoring in support of FDOT District 1's Phase I MS4 permit in Polk County. Installed and programmed an automated sampler to collect flow-weighted samples for analysis. Flow and rainfall data stored on the sampler were processed using Flowlink software to calculate storm hydrographs and nutrient loads.

TMDL and Water Quality Support for Pasco County, FL – Provides comprehensive water quality, TMDL and BMAP support. Developed a countywide TMDL plan to address issues raised by TMDLs proposed by FDEP and EPA. Prepared the TMDL Prioritization Report on behalf of MS4 co-permittees Pasco County, FDOT District 7 and Dade City. Provides technical support for the Weeki Wachee BMAP. Performs ongoing uploads of water quality data to STORET. Works with the County to develop technical comments on draft TMDLs. Reviewed EPA's proposed rules on Waters of the United States, NPDES e-reporting and Section 131 of the Clean Water Act clarification and prepared comments as needed.

TMDL and Water Quality Support for Hillsborough County, FL – Provided technical support for the development of a countywide TMDL plan to address issues raised by TMDLs proposed by FDEP and EPA. Worked with the County to develop technical comments to draft TMDLs, including development of detailed waterbody assessment reports and data analyses.

Impaired Waters Listing Support for FDOT District 1, FL – Developed a single, comprehensive list of impaired waters and waters with adopted TMDLs within FDOT District 1. Work included combining information from the many lists that currently identify impaired waters and TMDLs into one list that FDOT and the permitting agencies would use to identify whether or not a project discharges to an impaired water. Provided GIS shapefiles and Google Earth files of impaired waters for use by design consultants.

Feasibility Study for Stormwater Treatment Area for FDOT District 1, FL – Developed a preliminary feasibility study for three options for water quality improvement in the Lake Okeechobee basin to be constructed in conjunction with the extension of SR 710 in Okeechobee County. Options considered include a 60-acre stormwater treatment area; flow diversion through biosorption activated media; and increased water storage and nutrient removal through restoration of an impacted wetland. The study was done in direct coordination with FDEP and SFWMD. Both TN and TP load reductions were calculated in addition to preliminary design, construction and maintenance costs.

YEARS OF PROFESSIONAL EXPERIENCE:

Total: 18
ATM: 14

AREAS OF SPECIALIZATION

- Environmental permitting
- Climate change adaptation
- Environmental impact assessment
- Aquatic and marine resource assessments
- Habitat evaluation and restoration
- Wetland delineation and restoration

EDUCATION

NOAA Coastal Management Fellow, Kachemak Bay National Estuarine Research Reserve, 1997-1999

Master of Marine Affairs, College of Ocean and Fishery Sciences, University of Washington, 1997.

B.A., Biology, Minor in Marine Science, Smith College, 1992

PROFESSIONAL REGISTRATIONS

- USACE/EPA Wetland Scientist Certification, 1995
- Advanced Wetland Delineation, 2006
- Southeast Wetland Restoration Techniques, 2002
- Diver: Scientific, Dry Suit, First Aid, 1989-2009

SUMMARY OF QUALIFICATIONS

Ms. Lussier is a senior scientist extensive experience in marine and aquatic science and management. Her consulting experience includes Environmental Impact Assessments (EIA), protected species evaluations, wetland delineation, permitting, mitigation and restoration. Ms. Lussier's major projects include environmental assessment, planning, and impact evaluations for marinas, waterfront development, port expansion, and navigation improvement. She has authored natural resource assessments for projects in South Carolina, Georgia, Florida, North Carolina, Alaska, Washington, Bahamas, British Virgin Islands, Anguilla, and St. Lucia.

Her experience in climate change adaptation includes planning for extreme events such as floods, storms, and natural resource fluctuations. Her work in the Pacific Northwest included mitigation and planning for water resource management in a changing climate. Project experience includes:

PROJECT EXPERIENCE

Ocean Neighbors Lake Review, SC – Performed a biological assessment and assisted with measuring pond depths and determining the reason for the fish kills. Helped to develop the solution to the problem.

Wetland Services Town of Port Royal SC – Performed wetland delineation, jurisdictional determination permitting and habitat assessment for Cypress, 15th Street and Duck Blind wetland system. Also worked with OCRM to set critical lines for the SCSPA property. Wrote natural history interpretation signs for the wetlands.

Town of Port Royal, SC – Have provided scientific and environmental support for the town since 2008.

Cypress Wetlands, Town of Port Royal, SC – Developed plan to reestablish bird rookeries, remove invasive species and to monitor the bird and overall habitat for the Cypress Wetlands Stormwater Management project.

Community Based Restoration Program, SC – Sought, evaluated, reviewed and initiated coastal habitat restoration projects in South and North Carolina and Georgia for NMFS.

Estuarine Dependent Species Distribution in the Savannah River, GA – Field services to characterize the fish and invertebrate community using net and trawl sampling techniques for SCDNR.

Dolnik Wetland Permitting, SC – Coordinated wetland jurisdictional determination for a 500-acre tract, including permitting processes, mitigation and agency involvement in Jasper County.

Coweta County Road and Bridge Improvements, GA – Wrote Environmental Assessments for bridge and road improvement projects, including wetlands, protected species and habitat assessments following GDOT requirements.

Harbour Oaks Wetland Permitting, SC – Provided wetland mitigation plan for improved access corridors to an Intracoastal Waterway island.

Griffith Wetland Permitting, SC – Guided jurisdictional wetland determination for a 12-acre borrow pit and adjacent wetlands on proposed development site.

Shahid Wetland Permitting, SC – Conducted wetland evaluation and determination process for a three-acre property at proposed development site.

Hardeeville Industrial Park Permitting, SC – Provided wetland delineation, determination and onsite preservation and mitigation plan to resource agencies to gain permit for industrial park development.

Griffith Holiday Drive Wetland Permitting, SC – Provided wetland mitigation plan to utilize onsite opportunities to provide quality habitat for wildlife and preserve open space park areas for residents and the public.

Hutchinson Island, Georgia Ports Authority, GA – Evaluated feasibility of multiple port expansion sites and designs in Georgia and South Carolina with respect to fatal flaws such as environmental and permitting timeline barriers.

Agitation Dredging Feasibility Study, GA – Prepared benthic resource and aquatic resource assessment on the effects of agitation dredging with an emphasis on total suspended solids, dissolved oxygen and contaminants.

Savannah Harbor Deepening, GA – Coordinated fisheries studies on estuarine-dependent fauna, sciaenid spawning aggregations, and short nose sturgeon. Represented client at stakeholder and agency committee meetings.

Colonel's Island T&E Permitting, GA – Submitted ecological and threatened and endangered species assessments to address regulatory concerns regarding wood stork foraging habitat impacts for Highway 17 Overpass.

Etowah Bend T&E Permitting, GA – Developed recommendations to protect endangered riverine fishes through stream buffering, construction best management practices and pre-project evacuation of listed fish species.

Highway 378 Bridge Replacement, Horry and Marion Counties, SC – Submitted permit modification, developed wetland and fisheries assessment and mitigation and developed mitigation for permit violation due to inadvertent wetland impacts.

Jafza Environmental Due Diligence – Coordinated and performed the T&E survey, reviewed wetland delineations, worked on identifying and resolving issues with Drop Worts (an endangered vegetation species) on 1,200 acre tract in Santee, SC.

Container Berth 2 & 3, Georgia Ports Authority, GA – Applied acoustic data and prepared evaluation to determine effects to shortnose sturgeon from pile driving and construction.

Naval Base Terminal and Transportation Improvements for State Ports Authority, SC – Conducted wetland delineation, threatened and endangered species assessments and prepared natural resource assessments for the permit application and EIS.



Kathleen McAllister

Environmental Planner

Areas of Expertise

- Water Resources Management & Planning
- Climate Change Adaptation Planning
- Environmental Management and Communications
- Master Planning and Land Use
- Emergency Preparedness and Response Planning
- Renewable Energy Analysis
- Cost-Benefit Analysis

Academic Background

Master of Science,
Environmental Sciences
and Policy, Johns
Hopkins University

Bachelor of Arts,
Sociology, Lehigh
University

PROFESSIONAL EXPERIENCE

Horsley Witten Group,
Inc., Environmental
Planner, August 2011 to
Present

Opinion Dynamics
Corporation, Energy
Analyst, November
2010-August 2011

U.S. National Academy
of Sciences, Associate
Program Officer, July
2006-October 2010

Kathleen McAllister is an Environmental Planner for the Horsley Witten Group, Inc. (HW). Kathleen is currently involved in a number of water resources management, planning and environmental analysis projects at the municipal, state, and federal levels. In her role as an environmental planner, Kathleen has worked on water resources management projects to evaluate local impacts and examine strategies to increase resiliency and improve stormwater management and flood protection. She also conducts water quality analysis for permitting projects, as well as demographic and geospatial data collection and analysis. Kathleen serves as a Project Manager for municipal and federal level projects and provides technical assistance and support to the U.S. EPA's Office of Science and Technology Water Quality Standards (WQS) Program. Kathleen has worked for nearly nine years in the environmental and energy analysis field. Prior to her work at HW, she conducted energy savings analysis and cost benefit analysis of energy efficiency and renewable energy programs and worked on sustainability science and policy analysis.

REPRESENTATIVE PROJECT EXPERIENCE

Nancy Creek Watershed Improvement Plan & Murphey Candler Lake Management Plan, Brookhaven, GA: Kathleen currently serves as the project manager and project lead, assisting the city of Brookhaven with watershed improvement and lake management plans. As part of this work, Kathleen conducts field work, including 8.5 miles of stream walks and habitat assessments and lake chemical sampling. In her role as project manager, Kathleen is also responsible for overseeing pollutant load modeling and best management practice analysis, as well the facilitation of stakeholder and public meetings.

Source Water Protection Workshops and Table Top Exercises, West Virginia Department of Health and Human Resources: Kathleen is currently assisting water sector stakeholders in West Virginia by developing and conducting a series of Table Top Exercises to increase preparedness in the event of source water contamination. Kathleen also assisted in the development and execution of a large workshop held on August 19, 2014 to provide West Virginia drinking water utilities with information on meeting the requirements of West Virginia Senate Bill 373, which mandated source water protection plans for nearly all systems. As part of her role as project manager, Kathleen's duties include agenda development, logistics planning and venue selection, budget tracking, and writeup of the technical meeting summaries.

Rhodemap RI, A Regional Plan for Sustainable Development: Worked as part of the consultant team in collaboration with the Rhode Island's Division of Statewide Planning to develop a regional plan for sustainable development. Provided support in the form of webinar facilitation and logistical support for major public meetings and data collection and analysis.

U.S. EPA Beach Program Communications Plan: Assisted in the development of a communications plan for the U.S. EPA Beach Program, within the Office of Science and Technology. This support included in-person interviews with EPA staff and relevant/similar programs.



Kathleen McAllister

Environmental Planner

Atlanta Regional Commission – Climate Resiliency and Water Supply: As a subcontractor to King & Spaulding LLP, Kathleen served as the project manager and project lead to conduct a literature and stakeholder interviews, and produce a white paper. The literature review and white paper examine national and international climate science and climate change adaptation in the context of water supply resiliency in the Atlanta Metro Region.

National Weather Service Flash Flood Summit: In September 2014, Kathleen assisted NOAA's National Weather Service in conducting a two-day Flash Flood Summit in Tuscaloosa, Alabama. Kathleen assisted NWS staff in meeting materials preparation, and facilitation. Kathleen's facilitation duties included guiding discussions among highly technical participants on the topic of weather modeling, monitoring, forecasting, and flash flood communication strategies.

Albemarle-Pamlico Sound Climate Ready Water Utilities Project, U.S. EPA: Supported the US EPA to conduct an analysis on climate change impacts in the Albemarle-Pamlico Sound in NC. Kathleen worked with the Albemarle-Pamlico NEP to utilize CREAT to identify climate threats and potential adaptation measures in the towns of Manteo and Columbia in an effort to mitigate risks associated with climate change impacts, particularly sea level rise and coastal storm surge.

U.S.EPA Preparing for Extreme Weather Events - Workshop Planner for the Water Sector: Developed HTML-based tool which helps drinking water, wastewater and stormwater utilities prepare for extreme events by providing materials needed to plan, facilitate and conduct an extreme weather adaptation planning workshop. These workshops create a forum to openly discuss extreme event adaptation while bringing utility and community partners together.

U.S. EPA Climate Change and Water Strategy – National Water Program (NWP), Washington D.C: Project Manager and project lead for support to the National Water Program on climate change activities. Ongoing tasks include supporting monthly and quarterly web conferences for the State-Tribal Climate Change Council, technical support to develop and finalize the Adaptation Strategy for the NWP Climate Change Workgroup and to produce yearly 'Highlights of Progress' reports, managing content for and distributing a bi-weekly climate change e-newsletter, maintaining content of the National Water Program -Climate Change website, and development of regional factsheets.

Master Plan Update, Town of Easton, MA: Assisted in the Master Plan Update process, "Envision Easton." Kathleen provided public meeting facilitation support for the Master Plan Update process, and provided project support on the Envision Easton project, which is the community's first opportunity in over 40 years to participate in a town-wide comprehensive master planning process.

Master Plan Update, Town of Shrewsbury, MA: Provided support to update the Master Plan for Shrewsbury, Massachusetts by gathering technical and U.S. Census data for statistical analysis, specifically for posters and materials for public meetings and conducting research to update the Plan.



Engineering and Consulting Services for 2015 Stormwater Management Implementation Guide

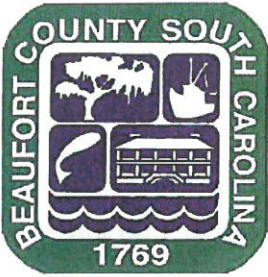
The following fees will apply to all work performed by the ATM Team and will not be subject to change until June 1, 2017.

Principal Engineer/Scientist/Technical Advisor	\$ 165.00 / hr
Senior Engineer/Modeler	\$ 165.00 / hr
Engineer (PE)	\$ 135.00 / hr
Staff Modeler	\$ 100.00 / hr
Associate Engineer (EIT)	\$ 100.00 / hr
Biologist	\$ 100.00 / hr
GIS Specialist	\$ 100.00 / hr
Draft/CADD	\$ 85.00 / hr
Graphic Designer	\$ 70.00 / hr
Document Coordinator/Technical Editor	\$ 80.00 / hr
Administrative	\$ 65.00 / hr

In addition to the hourly fees, an expense reimbursement multiplier of 5 percent of the total direct expenses associated with travel, subsistence, materials, overnight delivery, and reproduction. Sub-consultant costs will be invoiced at cost plus an administrative management fee of 10 percent.



Coastal, Environmental, Marine and Water Resources Engineering



Beaufort County
Purchasing Department

Exhibit A: Offer Form

Engineering and Consulting Service for 2015 Beaufort County

Statement of Qualifications Title: Stormwater Management Implementation Guide

RFQ Notice Number: 07022015

The undersigned on behalf of the entity, firm, company, partnership, or other legal entity listed below offers on its behalf to Beaufort County a SOQ that contains all terms, conditions, specifications and amendments in the Request for Qualifications (RFQ) issued by the County listed above. Any exception to the terms contained in the RFQ must be specifically indicated in writing and are subject to the approval of the County prior to acceptance. The signature below certifies your understanding and compliance with the terms and conditions contained in this RFQ.

Consultant (Firm) Name: Applied Technology & Management, Inc.

Federal Tax ID Number: 59-2413268

Mailing Address: 12 Richland Drive

City, State, Zip Code: Bluffton, SC 29909

Telephone Number: (843) 290-0980

Fax Number: (843) 414-0155

E-Mail Address: emodzelewski@appliedtm.com

Edward H Modzelewski
Authorized Signature

Edward Modzelewski, M.S., Chairman
Printed Name and Title

6/26/2015
Date

EXHIBIT B

PROPOSAL AND CERTIFICATION

RFQ NO. 07022015

PAGE 1 of 3

The undersigned Applied Technology & Management Inc., having carefully examined the
(Name of Consultant / Firm)
information contained in the Beaufort County RFQ Number # 07022015
dated May 22, 2015, proposes to provide engineering and consulting
services to Beaufort County Government, as outlined in this SOQ.

In compliance with the Request for Qualifications # 07022015, and subject to all
conditions thereof, the undersigned agrees:

- (a) This SOQ, as stated, is open for acceptance for a period of 90 calendar days from the date of opening; and
- (b) To furnish all services, materials, and equipment necessary and incidental to perform the subject services.

CERTIFICATION

State whether or not your company has been involved in any litigation within the past five (5) years, arising out of your performance by indicating

YES OR NO

See ATTACHMENT "A" at the end of this document

(If you indicated "YES", explain fully in a separate attachment)

HAS A FEDERAL AGENCY OR A FEDERALLY CERTIFIED STATE OR LOCAL AGENCY PERFORMED ANY REVIEW OF YOUR ACCOUNTS OR RECORDS IN CONNECTION WITH ANY GRANT OR CONTRACT WITHIN ANY GRANT OR CONTRACT WITHIN THE PAST TWELVE MONTHS?

YES OR NO

(IF "YES" GIVE NAME, ADDRESS, AND TELEPHONE NUMBER OF REVIEWING OFFICE IN A SEPARATE ATTACHMENT)

RFQ NO. 07022015

EXHIBIT B (2 of 3)

PAGE 2 of 3

This SOQ is submitted for use in connection with and in response to Beaufort County RFQ # 07022015. This is to certify, to the best of my knowledge and belief, that the information summarized herein are complete, current, and accurate as of 6/26/15, 2015, and that a financial accounting capability exists to fully and accurately account for the financial transactions under this project.

This SOQ is made without prior understanding, agreement, or connections with any corporation, firm, or person submitting a SOQ for the same service and is in all respect fair and without collusion or fraud. I agree to abide by all conditions of this RFQ and certify that I am authorized to sign this SOQ.

Signature of Consultant's Representative authorized to enter into contract with Beaufort County Council:

FIRM NAME: Applied Technology & Management, Inc.

BY: Edward H. Modzelewski DATE: 6/26/2015
(Signature)

TYPE/PRINT: Edward Modzelewski, M.S., Chairman
(Name) (Title)

ADDRESS: 12 Richland Drive
(Street Address and/or P. O. Box Number)

Bluffton SC 29909
(City) (State) (Zip Code)

PHONE: (843) 290-0980 FAX: (843) 414-0155
(Area Code) Phone Number (Area Code) Fax Number

EMAIL: emodzelewski@appliedtm.com

FEDERAL ID#: 59-2413268 S.C. TAX #: 25210590-2

RFQ NO. 07022015

EXHIBIT B (3 of 3)

PAGE 3 of 3

IS YOUR FIRM: 1.SOLE PROPRIETORSHIP YES NO
 2.PARTNERSHIP YES NO
 3.CORPORATION YES NO

IF COMPANY IS A SOLE PROPRIETORSHIP, LIST THE OWNER'S FULL LEGAL NAME:

IF COMPANY IS A PARTNERSHIP, LIST THE PARTNERS' FULL LEGAL NAMES:

IF COMPANY IS A CORPORATION, LIST THE FULL LEGAL NAME, AS LISTED ON THE CORPORATE CHARTER:

Applied Technology & Management, Inc.

IS THIS FIRM A MINORITY, OR WOMAN-OWNED BUSINESS ENTERPRISE?

YES NO IF YES, SPECIFY: MBE WBE

HAS THIS FIRM BEEN CERTIFIED AS A MINORITY/WOMAN-OWNED BUSINESS ENTERPRISE BY ANY GOVERNMENTAL AGENCY? YES NO

IF YES, SPECIFY GOVERNMENTAL AGENCY: _____

DATE OF CERTIFICATION: _____

RFP 07022015

ATM Statement of Litigation

1. *Town of Lake Park vs ATM, Murphy Construction Company, Bridge Design Associates, Inc., and Lumberman's Mutual Casualty Company Defendants, Palm Beach County Circuit Court Case No. 50-2008 CA 010498XXXX AA MB.*

After rejecting all bids to build ATM's comprehensive marina design, the Town chose Murphy Construction and its consulting engineer, Bridge Design, to design/build the project in multiple stages, leaving ATM in an advisory role. Subsequently, following damage from three hurricanes, the Town sued all parties involved in the original project, seeking reconstruction and improvements based on ATM's original design. The case reached final settlement and was dismissed on January 4, 2013.

2. *David Drawdy vs Beaufort County and ATM.*

Property owner alleged that a municipal boat ramp was improperly sited on his property. ATM had pointed out the boundary issues to Beaufort County during its planning engagement and the County proceeded with construction. ATM had no involvement with the construction of the project. Claim was settled for \$1,500 in February 2011.

NOTE: All claims brought against ATM have fallen within the scope of its very comprehensive insurance coverage.



COUNTY COUNCIL OF BEAUFORT COUNTY
PURCHASING DEPARTMENT

106 Industrial Village Road, Bldg 2, Post Office Drawer 1228
Beaufort, South Carolina 29901-1228

David L. Thomas, Purchasing Director
dthomas@bcgov.net, 843.255.2353

TO: All Prospective Vendors
DATE: June 23, 2015

ADDENDUM 1
Engineering and Consulting Services for 2015 Beaufort County
Stormwater Management Implementation Guide
RFQ 07022015

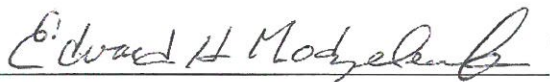
The following information will amend, modify, and/or clarify the proposal documents described above and are hereby part of the same. Please incorporate these items into the solicitation documents for the above-referenced project. Please acknowledge receipt of this addendum on the solicitation form.

- 1) Has a time period been established for this contract? No. Negotiated as part of contract
- 2) Has a level of effort (estimated hours) been established for this contract? No. Negotiated as part of contract
- 3) Are you looking for respondents to provide details on their proposed approach to the scope of services, and if so should we provide those details under Item 4 of our submission (since Item 3 is not applicable to this RFQ)? You can give us your approach as part of the executive summary in item 1. You can use item 3 if you wish to separate the scope of work. The format will not be held so rigid as to disqualify anyone for providing additional information within the SOQ.
- 4) I wanted to confirm that the price proposal should only include rates and other unit costs, as opposed to a total cost for the scope of services. Is this correct? Yes
- 5) Is there any required format for the Price Proposal? No. Just make sure to include the hourly rate of all staff to be working on the project and the unit cost or reimbursable rate for any direct expenses such as travel, copies, postage, meals, etc. that are anticipated during the project.

Sincerely,

David L. Thomas, CPPO
Beaufort County Purchasing Director

acknowledge receipt of Addendum 1



CONTRACT

THIS CONTRACT is made this November 10, 2015, by and between Beaufort County, a political subdivision of the State of South Carolina (hereinafter referred to as "County") and Applied Technology & Management, Inc. (hereinafter referred to as "Contractor"). This Contract shall consist, by reference of all the terms, conditions, scope of work, specifications and provisions contained in RFP Number 07122015 dated May 22, 2015 (advertised in The Island Packet/Beaufort Gazette on May 15, 2015, Addendum dated June 23, 2015 and Contractor's Proposal dated July 2, 2015.

WITNESSETH:

WHEREAS, the Contractor and the County desire to enter into this contract relating Engineering and Consulting Services for the 2015 Stormwater Management Implementation Guide subject to the terms, specifications, conditions and provisions of the request for proposal as heretofore mentioned.

NOW, THEREFORE, the Contractor and the County agree to all of these terms, conditions, specifications, provisions and the special provisions as listed below:

- A. This Contract is deemed to be under and shall be governed by and construed according to the laws of the State of South Carolina.
- B. Any litigation arising out of this Contract shall be held only in a circuit court of Beaufort County, Beaufort, South Carolina in the Fourteenth Judicial Circuit.
- C. The Contractor shall not sublet, assign, nor by means of a stock transfer sale of its business, assign or transfer this Contract without the written consent of the County.
- D. This Contract, including the terms, conditions, specifications and provisions listed herein makes up the entire contract between the Contractor and County. No other Contract, oral or otherwise, regarding the subject matter of this Contract shall be deemed to exist or bind either party hereto.
- E. It is understood that this Contract shall be considered exclusive between the parties.
- F. Any provisions of this Contract found to be prohibited by law shall be ineffective, to the extent of such prohibition, without invalidating the remainder of this Contract.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties agree as follows:

ARTICLE 1 BACKGROUND/SCOPE OF WORK

Background

The Contractor does hereby offer to the County services for the purpose of providing engineering and consulting services for assisting the County Stormwater Utility with various regulatory and engineering projects as may be requested by the Stormwater Utility Manager as contained and described in future the Scopes of Work as may be mutually agreed to by the parties.

Scope of Work

The Contractor will assist the County with a detailed update of its 2006 Stormwater Management Plan as follows:

Section 1 - Introduction:

In February 2006 Thomas & Hutton Engineers and Camp Dresser and McKee, Inc. completed the first overall Stormwater Management Plan (SWMP) for Beaufort County and the adjoining municipalities. This study was undertaken as the overall water quality within waterbodies in the County and its adjoining municipalities were being adversely impacted by rapid growth in many areas of the County. In addition to water quality issues, the County was also experiencing flooding in a number of areas.

Up until 2006, stormwater management was flood prevention management and focused primarily on moving stormwater away from roads and developments as rapidly as possible with minimal concerns for the impacts the rapid movement of stormwater had on the unique and sensitive estuarine environment that exists throughout Beaufort County. In the mid-1990's the Clean Water Task Force began to study these impacts and began to quantify stormwater runoff impacts on the estuary. In 2001 the County created the current Stormwater Utility to begin to address not only flooding issues but also current stormwater design practices and their impacts on the estuarine environment.

In 2006 the County began implementation of recommendations from the SWMP. The major recommendations of the SWMP included:

- Establish a Level of Service (LOS) and Extent of Service (EOS) for both water quality and flood control
- Identify areas where increases in the conveyance capacity of the Primary Stormwater Management System and/or stormwater retention was needed to control peak stormwater flow and flooding
- Implement a series of Stormwater Best Management Practices (BMPs) to provide treatment of stormwater prior to its discharge to the estuary
- Identify and create where practicable regional stormwater treatment facilities, especially in already developed areas
- Implement development controls and the inclusion of BMPs for all new land developments

- Create a GIS-based inventory of all stormwater conveyance systems in the County

Since 2006 the County has:

- Established the LOS and EOS for the County Stormwater Utility
- Developed a Capital Improvements Plan to implement findings of the 2006 SWMP modeling efforts and recommendations for both flooding and water quality improvement
- Created an in-depth and detailed Stormwater BMP manual for use with all development within the County
- Began key stormwater retrofit projects (e.g. Okatie East, County Services Center Parking Lot impervious area conversion)
- Implemented ordinances with the County ZDSO that require stormwater treatment and discharge systems to meet certain requirements
- Continued to build its inventory of existing stormwater conveyance systems

In addition the municipalities have implemented many of their own stormwater conveyance systems and water quality BMPs. For example:

- Bluffton has developed its own BMP design manual as well as a Stormwater Ordinance, undertaken improvements in the Bluffton Park area and has developed an estimate of the total impervious cover in and around the Town.
- Hilton Head has implemented many new stormwater control systems with associated BMPs and is currently in the first phases of dredging and cleaning of the many aged stormwater ponds within the community. The Town has also adopted the County's Stormwater BMP manual for use with the design of new stormwater system.
- The City of Beaufort has adopted the County's Stormwater BMP manual as well, developed its Stormwater Ordinance, has incorporated stormwater quality BMPs into its newest planning documents and is in the process of identifying aged stormwater infrastructure for capital planning purposes.
- The Town of Port Royal has constructed the first regional Stormwater Management system and continues to expand the scope of the Stormwater Management system service areas. The Town also has adopted the County's Stormwater BMP manual for use within new and redeveloped areas of the Town, is in the process of inventorying its piped drainage systems and continues its street sweeping program.

Since the 2006 SWMP was implemented, the County has experienced continued growth in critical areas of the estuary and continued closure of Shellfish Harvesting Areas. To address these issues as well as new federally mandated regulations the County has:

- Voluntarily developed and implemented new strict Stormwater Volume Control Regulations
- Been designated by SCDHEC as a Phase II Small MS4 community (MS4)
- Had a TMDL placed on the Okatie River, Chechessee River, and Beaufort River (which is no longer on the Impaired Waters List)

All of these major changes as well as new and changing growth patterns related to development have resulted in the need to update the 2006 SWMP.

One of the most far-reaching federal regulations the County and municipalities must implement are the MS4 regulations. These regulations provide a specific time line and requirements the County and municipalities must implement as part of its SWMP and will impact how the Stormwater Utility operates. Under the MS4 regulations, the County and municipalities have or will be required to submit to SCDHEC its Notice of Intent (NOI) for coverage under the SCDHEC General MS4 permit. The NOI outlines how the County or municipality will implement the following MS4 permit requirements:

- Public Education Program
- Public Involvement Program
- Sediment and Erosion Control for all public and private construction projects
- Illicit discharge and detection program
- Post-development stormwater system management
- Good housekeeping of public facilities

The MS4 regulations have the same goal the County and municipalities have had since the mid 1990's; water quality improvement.

The County, Bluffton and Hilton Head are already designated MS4s (it is anticipated that Beaufort and Port Royal will be designated in early 2016) and will be required to implement MS4 regulations. As part of the MS4 development a Stormwater Management Plan for each MS4 each has developed and submitted to DHEC as part of their individual NOIs. A great opportunity exists for the County and the municipalities to collaborate on not only implementing MS4 requirements, but also to develop complementing SWMPs and stormwater management regulations. Currently, various examples of collaboration exist. For example the City of Beaufort and the Town of Port Royal use the County's Stormwater BMP manual to regulate stormwater system design and water quality BMPs. Mostly all recognize and use a form of the County's Stormwater Volume Control Ordinance as well.

As part of the update of the SWMP, the County and municipalities should collaborate to maximize technical and personnel resources, identify and provide a corrective action plan for each entities' common and unique stormwater management issues, to implement common stormwater BMP practices, complimenting stormwater ordinances and stormwater system design standards. If stormwater management requirements are uniform across the County, the attraction for "jurisdiction shopping" at the expense of water quality could be eliminated.

The opportunities for collaboration are many and already exist. The County and municipalities already participate in a common Public Education and Involvement Program to meet these two Minimum Control Measures (MCMs) of the MS4 regulations. In addition, the County and municipalities have for a number of years jointly participated in the current water quality monitoring program. Additional areas of possible collaboration are:

- Development of uniform stormwater ordinances
- Development of uniform stormwater BMP manuals, design practices and plan review
- Shared resources for implementation of MS4 regulations
 - Stormwater project site inspections
 - IDDE program
 - MS4 yearly reporting requirements

Summary of Scope of Work for SWMP Update:

The following sections of this Scope of Work outline in detail the Scope of Work needed to update the SWMP and to integrate the new requirements outlined above into the current SWMP. A summary of the Scope of Work is as follows:

- Perform an in-depth review of the 2006 SWMP to identify areas needing updating
- Update growth area mapping throughout the County and Municipalities to determine growth and infill areas since 2006
- Review hydraulic and water quality modeling performed in 2006 and update models in priority watersheds focusing on watersheds with significant development and/or growth since 2006
- Investigate documented customer complaints to identify areas of concern
- Compare current findings against 2006 SWMP findings, develop updated SWMP and revised Capital Improvements Plan (CIP)
- Facilitate meetings of the SWIC to continue the current efforts to collaborate towards development of common stormwater practices, regulations and design requirements
- Facilitate regional public meetings to gain citizen input on stormwater concerns and issues
- Provide an updated SWMP to set the path forward for stormwater management with the County and municipalities
- Assist with presentations of SWMP update results and findings to County and municipal committees, board and/or councils

Section 2 – Detailed Scope of Engineering Services

In order to properly and thoroughly update the 2006 SWMP for Beaufort County and the municipalities a number of specific tasks will need to be undertaken. Each Task is outlined below:

Task One – Scoping Meeting with the Stormwater Implementation Committee (SWIC):

As in 2006, the overall goal of the County is to have all municipalities participate in the update of the SWMP as this process will become the responsibility of the SWIC, a committee established by intergovernmental agreement and consists of the stormwater managers for Beaufort County, the Towns of Hilton Head Island, Bluffton, and Port Royal, and the City of Beaufort. As a large percentage of the growth in the County since 2006 has occurred within municipal boundaries, it is important that the municipalities and Counties have equal roles in the SWMP update process. Under this Task, the Contractor will:

- Prepare a draft Scope of Services for review by all the SWIC members.
- Receive comments and offer modifications to the Scope of Services based upon comments received
- Facilitate a meeting of the SWIC to discuss and finalize any changes to the Scope of Services
- Prepare the final Scope of Services for approval by all SWIC members
- Participate in SWIC, NRC and County Council approval process

Work Product- Draft and Final Scope of Work

Meetings – Assume one Scoping Session with SWIC will be needed, final meeting with SWIC and participation at NRC and County Council meetings.

Task Two – Review and Analysis of 2006 SWMP:

Once Task One is completed, the Contractor will perform a high-level review the entire 2006 SWMP to develop an understanding of the goals and objectives of the plan, the key work tasks accomplished in the plan, and the recommendations for engineering standards (e.g. stormwater volume control ordinance) and capital improvements outlined in the plan. The Contractor will compare these to the current direction of the Stormwater Utility (Utility) and will work with the Utility staff to develop an outline of the changes, updates or corrections needed to the 2006 SWMP.

Work Product - Outline of Updated SWMP and recommended changes

Meetings – Assume on meeting with SWIC

Task Three – Facilitation of Public Meetings to Gain Citizen Input:

As public input into the stormwater planning process is critical to the public’s acceptance and support of the updated SWMP, public input into the updating process must be solicited. The Contractor will coordinate with the SWIC to select areas where public meetings can be advertised and conducted so that those living in various regions of the County and municipalities can have a means to provide input into the SWMP updating process. For the purpose of this Scope, it is anticipated that public meetings will be held in the following areas:

- Sheldon
- Lady’s Island
- Burton
- St. Helena
- Town of Port Royal & City of Beaufort
- Town of Bluffton & County areas in and around Bluffton
- Hilton Head Island

The Contractor will work with the SWIC to develop a short presentation of the SWMP Update process, goals and objectives. The Contractor will assist County and Municipal staff with facilitation of meetings, keeping minutes of each meeting and organizing public comments, complaints and concerns. The contractor will create sign-in sheets and coordinate with the County SW staff to post documentation from meeting on the web.

Work Product – Development of presentation, meeting minutes and written document organizing public input

Meetings – One meeting with SWIC to outline presentation, seven regional stormwater information meetings, one meeting with SWIC to review meeting results

Task Four – Review of Collected Water Quality Data Base:

The County has gathered thousands of water quality samples over the past ten years in an effort to identify areas of water quality improvement or degradation in various areas of the estuaries throughout the County. Water quality sampling and testing has been jointly funded by the County and municipalities since its inception during the development of the 2006 SWMP. For the purpose of this Scope we assume that all data is provided in an organized and workable geocoded data base (e.g. Access, GIS or other form). Contractor's engineers and scientists will collect all locally available monitoring data and perform statistical analyses to characterize the data's central tendencies and variability. Trend analyses will also be performed to identify locations of increasing concentrations. It is understood that Beaufort County is building a water quality database for their sampling program to provide to the contractor.

Comparisons to existing water quality standards will be made to identify possible excursions of water quality standards as well as locations whose trend indicates an exceedance of water quality standards during the planning horizon. The Contractor will work with the SWIC to identify key areas where water quality trends continue to show degradation and the constituents that may be the source of the degradation as well as areas that may achieve a degraded status during this planning horizon. These locations and their contributing watershed will be identified using GIS and tied to the existing sub-watersheds already identified in the GIS. This data will be used in other Tasks to help identify areas that may be in need of more in-depth study, particularly those where development has expanded since 2006 and to provide validation data for water quality models.

After review of the water quality data, The Contractor will recommend possible changes to the methods and timing of water quality sample collection, locations of sampling and sampling protocols all in an effort to maximize the usefulness of each piece of water quality data collected.

Work Product - Technical memorandum on results of water quality data analysis, identification of degraded areas and water quality impairment and recommendations for prioritizing areas of degraded or impaired water quality. The Contractor will also prepare a second technical memorandum that will make recommendations for possible changes in the County's current water quality sampling program and process.

Meetings- One meeting with SWIC to present results of technical memorandums

Task Five – Collect Previous Water Quality and Hydraulic Modeling Information:

A large portion of the work performed in development of the 2006 SWMP was creation of hydrologic/hydraulic and water quality models (ICPR, WMM, SWMM and WASP) for each major region and watershed in the County (watersheds include the municipalities). The County will obtain and provide to the Contractor the model input files and output files so that the Contractor can review each modeling sequence to determine if the particular model(s) will need to be updated. Reasons for updating could include:

- The watershed modeled has developed significantly and the percentage of impervious area has increased
- More current information is available via the County's ongoing data collection program that would improve the accuracy of model results and predictions

- An updated version of the model is available that has improved algorithms and parameterization.
- Priority areas within municipalities that have densified
- How stormwater volume controls, not in place in 2006, impact the watershed

The Contractor will review all the modeling information for the watersheds and will make specific recommendations as to which models should be updated and run based upon either changes in the watershed, the availability of sufficient data to perform model validations or improved modeling algorithms. **For the purpose of this Scope of Work, the Contractor assumes that the same areas of the County and municipalities modeled in 2006 will be those evaluated for updating.** These are:

- Calibogue Sound Watershed
- May River and Sound Watershed
- Chechessee River Watershed
- Colleton River Watershed
- New River Watershed
- Beaufort River Watershed
- Coosaw River Watershed
- Whale Branch Watershed
- Morgan River Watershed
- Broad River Watershed
- Combahee River Watershed
- Coastal Area Watersheds
- Hilton Head Island Hydrologic/Hydraulic Analysis

Further, for the purpose of this Scope of Work, the Contractor will assume the following:

- The County will be able to provide the Contractor with all models, model input and output files used for the above 2006 analyses. It is also assumed that the model input and output files are organized by watershed and are those models whose results are contained in the 2006 SWMP. This would include existing and future land-use scenarios, calibrated simulations and alternative management scenarios. **If some or none of this information is not available, then the Contractor reserves the right to request a change to this Scope of Work as the Contractor would need to create completely new models of each watershed in order to evaluate its condition from both a water quality and hydraulic perspective.**

Up to **seven (7)** of the above watersheds will be updated using County supplied data from the 2006 SWMP and incorporating stormwater volume controls, If less than seven watersheds are updated the fees associated with this Task will be adjusted accordingly. Once the 2006 modeling is reviewed, a watershed update prioritization list will be developed and presented to SWIC for concurrence on which watersheds require updated analysis and in which desired order. The level of effort to update the models will vary across watersheds depending on the magnitude of changes observed and other technical issues encountered. This will determine the ultimate number of watersheds in which models can be updated given the resources allocated. Depending on the results of this analysis and input from the SWIC, a final number of watersheds to be re-modeled will be determined and the scope of re-modeling will be defined. **It is likely that this**

Task will need to be revisited once the analysis of the 2006 models is completed and the actual number for watersheds to be modeled is determined. Based on our current knowledge of the watersheds and the components of the 2006 models, we estimate that we may be able to update up to seven of the watershed models depending on the quality of the models received for each watershed and the magnitude of changes to the watersheds. The budget established for this effort is an estimate based on the assumption that all data utilized in the 2006 watershed models is available in electronic format and that no major changes in sub-basin drainage boundaries have occurred. The work effort required for this task will be developed by the Contractor to fit within the allocated budget. If additional work is requested that exceeds the allocated budget, the Contractor will develop a scope of work and fee estimate for approval.

- In addition to review of the Colleton River Watershed results contained in the SWMP, the contractor will review the Okatie SAMP study (ATM, 2002) to assess contributions from Jasper County to the Okatie River. The contractor will develop and evaluate approaches to address requirements of Okatie River TMDL for fecal coliform as they relate to contributions from Jasper County.
- Sea-level rise predictions (one-foot per 100-years), as contained within the recent sea-level rise study (SC Sea Grant, 2014), will be incorporated into selected models (chosen in conjunction with the SWIC) to evaluate impacts on existing infrastructure and projects in the current Capital Improvements Program (CIP)

Using the 2006 modeling information provided by the County as well as the existing water quality sampling database to be provided by the County and others as well as advances in model capabilities the Contractor will re-model watersheds as necessary.

As the SWIC members have been developing their stormwater system inventories, each SWIC member will be asked to update their GIS layers for the primary and secondary drainage systems inventory and development growth patterns and to provide the Contractor with this data in a form that can be input into the GIS.

Work Product – Modeling input and output files for all new and/or re-modeled watersheds, recommendations for stormwater system improvements in each watershed based upon output from new models, volume control and/or reuse of 2006 developed models and a list of potential stormwater improvement projects that are needed to correct water quantity and/or water quality problems.

Meetings – One with SWIC once the analysis of the 2006 modeling is completed to finalize watersheds to be modeled and results needed. One meeting with County Stormwater Staff to review draft modeling results. One meeting with SWIC to review the results of this Task upon completion.

Task Six - Review and update Capital Improvements Plan (CIP) Based on Model Output and/or Reuse of Existing Models:

The Contractor will divide the CIP process into two steps. The first being a review of the current 2006 SWMP CIP and the second being development of an updated CIP using the results of Task Five.

As many changes have occurred with new water quality-related regulations in both the County and municipalities and as a result of the MS4 process, the Contractor will evaluate the current CIP presented in the 2006 SWMP to determine if the projects presented will:

- Meet the current water quality goals and regulations currently in place?
- Provide the water quality and/or hydraulic improvements established for each project in the 2006 SWMP CIP?
- Meet the intent of each entities' MS4 NOI

Also, the Contractor will work with the SWIC to identify the status of each of the projects presented in the 2006 SWMP CIP.

Using the results of new and/or existing models and the Contractor's review of the 2006 SWMP CIP, the Contractor will develop and evaluate alternative approaches to address existing and future stormwater problems. The developed alternatives will be reviewed with the SWIC based upon:

- Updated modeling results
- Reuse of existing modeling results from 2006 SWMP
- Information gathered as a result of public input (Task 3)
- Local, state and federal regulatory changes that have occurred since 2006
- Ability to construct the needed improvement (e.g. land acquisition, access to site, etc.)
- Capital costs
- Evaluation of the remaining SWMP CIP developed in 2006
- Cost vs. benefit of the needed improvement

The alternatives will be conceptual in detail and would provide general characteristics of conveyance, storage, treatment requirements using the above criteria, the ability to meet the level-of-service (LOS) goals established with the SWIC and a probable engineering, permitting, land acquisition and construction cost. Proposed projects would include the evaluation of the potential use of and location for regional stormwater facilities. In addition, the following general alternatives would also be evaluated:

- Possible water quality improvements in developed areas using improved maintenance
- Possible water quality improvements in developed areas using structural BMPs (improvement of existing, LID practices or construction of new BMPs)
- Incorporation of regional BMPs in future developments using new regional structural BMPs or existing BMP structural modifications

Impacts on projects due to sea-level rise will be assessed using guidance from the recently completed sea-level rise study (SC Sea Grant, 2014).

Using the above criteria, an updated CIP for each entity will be developed in conjunction with the SWIC. A time line will need to be developed for each project that coordinates with the results of the current Cost of Service Study. Now that each entity has its own Stormwater Utility Rate Model, the Contractor will use these models to assist each entity with updating its CIP to match current and future capital funding sources.

Work Product – Capital Improvement Plan broken down by each entity and impact on current and future stormwater utility rates.

Meetings – One meeting with the SWIC to review the CIP process, One Meeting with each municipality and County to determine CIP needs. One meeting with the SWIC to review CIP plans for each entity.

Task Seven - Develop recommendations for key elements of new SW Ordinance and BMP Manuals:

One major requirement of the SCDHEC MS4 regulations is that each MS4 develop a standalone stormwater ordinance. Using the Contractor’s experience with development of other standalone stormwater ordinances along the South Carolina coast, the Contractor will develop a list of key elements that should be included in the new standalone stormwater ordinance and BMP manual that each entity should include in its existing or future stormwater ordinances.

It is anticipated that those municipalities that either do not have current Stormwater Ordinances or outdated or incomplete (when compared to MS4 requirements) Stormwater Ordinances will be able to use this review to develop complimenting stormwater ordinances.

One of the major recommendations of the 2006 SWMP was for the Utility to develop a BMP Manual so that the engineering requirements the Utility developed could be documented in a manner that engineering of redeveloped and new development projects could be clearly understood. Since its inception, the BMP manual has undergone a number of changes including the additions of a number of major appendances (e.g. implementation of Stormwater Volume Control regulations). The Contractor will work with the SWIC to review the current Stormwater BMP manual. Areas of review will include:

- Removal of “educational” information on BMPs to reduce the size of the manual.
- Benchmark the existing BMP manual against other coastal South Carolina Stormwater BMP manuals to compare, for example, layout, requirements and BMP preferences.
- How well does the existing BMP manual integrate into the upcoming stormwater ordinance required by MS4?

The Contractor will documents the results of its findings and will work with the SWIC to develop specific recommendations related to changes that should be made to the existing Stormwater BMP manual.

Those municipalities that currently recognize and use the County’s Stormwater BMP will benefit from this review. Those that do not recognize or use the County’s Stormwater BMP manual will be able to use this review to develop comparable Stormwater BMP manuals.

Work Product – the Contractor technical memorandum documenting the results of the Contractor’s review and recommendations for key elements of a new standalone stormwater ordinance and BMP Manuals, including recommendations for alterations to the existing Stormwater BMP manual.

Meetings- One with SWIC to review the Contractor recommendations

Task Eight – Provide Guidance on Completion of Primary and Secondary Drainage Systems Inventory

The development of the 2006 SWMP created a GIS-based inventory of a large portion of the County and municipalities' primary drainage systems and some of the associated secondary drainage systems. Since 2006, the staff has been inventorying the remaining primary and secondary drainage systems. The Contractor will review the sections of the drainage systems that have not been inventoried and will work with the SWIC to prioritize areas to be inventoried. Priority areas could include areas of new development that have occurred since 2006, areas where problematic flooding is occurring or sub-watersheds where water quality sampling may show new or continued water quality degradation. This information can be used to refine and optimize the scheduling of operations and maintenance activities and is an important component in meeting NPDES MS4 Phase 2 requirements.

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

Task Nine – Review and Revise Level of Service (LOS) and Extent of Service (EOS) Requirements:

The Contractor will review and evaluate the current LOS and EOS requirements from the County and municipalities to determine if their respective current LOS and EOS is sufficient, achievable, compliments each other and meets their overall stormwater goals. The Contractor will work with the SWIC and stormwater staffs for each entity update their LOS and EOS a needed and to produce collaborative updated LOS and EOS documents that can be presented to elected officials and the public and implemented by each community and the County.

Work Product – Contractor technical memorandum outlining recommendations for updating of the LOS and EOS documents for each entity.

Meetings – One with SWIC to discuss common aspects of LOS and EOS, one each with each entity to develop LOS and EOS documents.

Task Ten - Develop SWMP operational plan

The Contractor will work with the SWIC to develop a stormwater management operational plan. The plan would contain policies and procedures for:

- SW development plan submittal
- Review of submitted plans
- Staff inspection, documentation and close out of new SW systems & BMPs
- Staff post construction inspection
- Non-compliance, penalties, remedies, etc.
- Procedure for yearly review of WQ monitoring data to identify potential SW pollution sources
- Explain MS4 NOI, new SW Ordinance and BMP Manual will govern most of this

The Operational Plan will mirror the requirements outlined in the MS4 NOI, the upcoming Stormwater Ordinance(s) and BMP Manual(s). The Contractor will provide examples of the

various Operational Plan elements. The County and municipal staff will prepare a draft of each element of the Operational Plan and will provide the same to the Contractor for comments and/or recommendations as to changes to each element as may be needed. The Contractor will assist the SWIC with development of the final SWMP Operational Plan document.

As eventually all four municipalities will be designated as an MS4 community, the operational plan developed under this Task should be able to be used by all.

Work Product – The Contractor will provide examples of various SWMP Operational Plan documents to the County and municipalities.

Task Eleven – Report Development and Presentations to Elected Officials, Boards and the Public:

The Contractor will document the results of Tasks One through Ten into a single document that will become the updated Beaufort County SWMP that can be adopted and used by the County and municipalities.

The Contractor will present the results to the SWIC for input and comments. Once the SWIC is satisfied with the SWMP, the Contractor will assist each entity with presentation of the results of the updated SWMP to their respective boards or commissions and elected officials. For the purpose of this Scope of Work, the Contractor has assumed that no more than two individual presentations will be necessary for each entity.

For the purpose of this Scope of Work, the Contractor will assume two Contractor staff will attend each presentation and the Contractor will prepare the necessary PowerPoint presentations based on input from the SWIC member for that community.

Work Product – Final Updated SWMP in electronic form, PowerPoint presentation of results of the SWMP update customizable for presentation to various groups.

Meetings – One meeting with SWIC to present report, two meetings each with County, Bluffton, Hilton Head, Beaufort and Port Royal. Possible joint workshop of municipalities and County staff and elected officials prior to presentations to meetings to County, Bluffton, Hilton Head, Beaufort and Port Royal.

Section 3 - Cost

Cost Estimate

- See Attachment “A” for detailed breakdown of hourly rates and fees to be applied to the effort outlined for each task in this Scope of Work.

Subtotal: \$441,820.00

Contingency: \$33,180.00

Total: \$475,000.00

It is understood that the exact effort needed to complete this Scope of Work may vary depending upon the results of various meetings and SWIC, County and municipality input. The County and

the Contractor agree that the Contractor will track the overall cost of each Task and will advise the County in writing PRIOR TO exceeding the maximum cost not to exceed for each Task. This Scope of Work may be modified in the future by mutual agreement of the County if needed to re-allocate fees among these tasks or to adjust the maximum cost not to exceed.

ARTICLE 2 LIABILITY

The County and Contractor shall not be responsible to each other for any incidental, indirect or consequential damages incurred by either Contractor or County or for which either party may be liable to any third party which damages have been or are occasioned by services performed or reports prepared or other work performed hereunder.

ARTICLE 3 INDEMNIFICATION AND HOLD HARMLESS

The Contractor does hereby agree to indemnify and save harmless the County, its officers, agents and employees from and against any and all liability, claims, demands, damages, fines, fees, expenses, penalties, suits, proceedings, actions and cost of actions, including attorney's fees for trial and on appeal of any kind and nature to the extent arising or growing out of or in any way connected with the negligent performance of the Contract, by Contractor, its agents, servants or employees.

ARTICLE 4 ASSIGNMENT

Contractor shall not assign any rights or duties of the professional services contract without the expressed written consent of the County. Any assignment or subletting without the written consent of County shall be void and this Contract shall terminate at the option of the County. It is agreed and understood by the County that the Contractor has partnered with Raftelis Financial Consultants to provide certain sub-contracted professional services to the Contractor for the life of this Contract.

ARTICLE 5 PERFORMANCE PERIOD/TERM

The term of this Contract shall be for a period of approximately two (2) years starting on November 10, 2015 and ending on June 30, 2017. At the County's option, this contract may be renewed for one (1) additional one-year term.

ARTICLE 6 COMPENSATION

Article 1 includes the agreed upon compensation for the Contractor for the Scope of Work to be performed under this Contract. Hourly rates for Professional staff and reimbursement for expenses and sub-consultant costs will be as stated in the fee structure provided in the Contractor's Proposal dated July 2, 2015, amended October 12, 2015. Work performed on this Contract will be accounted for separately by the Contractor and the County will be invoiced on a monthly basis for work performed under this Contract. Payments will be made as outlined in Article 17.

ARTICLE 7 INSURANCE

Insurance

Contractor does hereby covenant, agree and hereby represent to the County that it has obtained workmen's compensation insurance, general liability and automobile liability insurance, as well as providing coverage against potential liability arising from and in any manner relating to the Contractor's performance of the Scope of Work contained in this Contract. Additionally, the Contractor agrees to list the County as 'additional insured' on Certificates of Insurance related to the execution of this Contract.

ARTICLE 8 DEFAULT / TERMINATION

Default

In the event of default or breach of any condition of this Contract resulting in litigation, the prevailing party would be entitled to reasonable attorneys' fees fixed by the Court. The remedies herein given to County under Default shall be cumulative, and the exercise of any one remedy by the County shall not be to the exclusion of any other remedy.

Termination

This contract may be terminated by the County, 'for convenience' 'for cause,' or by 'by mutual consent' as described in RFP Section V Paragraph 6.0.

1. Termination for Convenience

The County may, without cause, terminate this contract in whole or in part at any time for its convenience. In such instance, an adjustment shall be made to the Contractor, for the reasonable costs of the work performed through the date of termination. Termination costs do not include lost profits, consequential damages, delay damages, unabsorbed or under absorbed overhead of the Contractor or its subcontractors, and/or failure of Contractor to include termination for convenience clause into its subcontracts shall not expose the County to liability for lost profits in conjunction with a termination for convenience settlement or equitable adjustment. Contractor expressly waives any damages, delay damages, or indirect costs which may arise from County's election to terminate this contract in whole or in part for its convenience.

2. Termination For Cause

Termination by the County for cause, default, or negligence on the part of the Contractor shall be excluded from the foregoing provisions. Termination costs, if any, shall not apply. The thirty (30) days advance notice requirement is waived, and the default provision in this bid shall apply.

Reasons for Termination for Cause shall include but not limited to:

- a) Default as defined above,
- b) failing to make satisfactory progress in the prosecution of the contract
- c) endangering the performance of this contract
- d) criminal activity or misconduct,
- e) work that is deemed sub-standard by the County Representative.

3. Termination by Mutual Consent

Either party may terminate this Contract by mutual consent with written notice attesting and agreeing to a termination by mutual consent by either party. Upon such termination, the County shall pay the Contractor for all services performed hereunder up through the date of such termination. Termination by mutual consent may entitle the Contractor to reasonable costs allocable to the contract for work or costs incurred by the Contractor up to the date of termination. The Contractor must not be paid compensation as a result of a termination by mutual consent that exceeds the amount encumbered to pay for the cumulative value of all approved Task Orders to be performed under the contract.

ARTICLE 9 RESPONSIBILITY

The County will be responsible to provide the Contractor reasonable access to County locations when necessary, ensure cooperation of County employees in activities reasonable and appropriate under the project, and obtain authorization for access to third party sites, if required.

ARTICLE 10 FORCE MAJEURE

Should performance of Contractor services be materially affected by causes beyond its reasonable control, a *Force Majeure* results. *Force Majeure* includes, but is not restricted to:

- a) acts of God,
- b) acts of a legislative,
- c) administrative or judicial entity,
- d) acts of Contractors (other than subcontractors of Contractor),
- e) fires,
- f) floods,
- g) labor disturbances,
- h) civil unrest
- i) incorrect/inferior parts or materials
- j) terrorism
- k) unusually severe weather.

Contractor will be granted a time extension and the parties will negotiate an adjustment to the fee, where appropriate, based upon the effect of the Force Majeure upon Contractor's performance.

ARTICLE 11 SEVERABILITY

Every term or provision of this Contract is severable from others. Notwithstanding any possible future finding by a duly constituted authority that a particular term or provision is invalid, void, or unenforceable, this Contract has been made with the clear intention that the validity and enforceability of the remaining parts, terms and provisions shall not be affected thereby.

**ARTICLE 12
INDEPENDENT CONTRACTOR**

The Contractor shall be fully independent in performing the services and shall not act as an agent or employee of the County. As such, the Contractor shall be solely responsible for its employees, subcontractors, and agents and for their compensation, benefits, contributions and taxes, if any.

**ARTICLE 13
NOTICE**

The Contractor and the County shall notify each other of service of any notice of violation of any law, regulation, permit or license relating to the services; initiation of any proceedings to revoke any permits or licenses which relate to such services; revocation of any permits, licenses or other governmental authorizations relating to such services; or commencement of any litigation that could affect such services. Such notice shall be delivered by U.S. mail with proper postage affixed thereto and addressed as follows:

County: Beaufort County
Attn: Beaufort County Purchasing Director
P. O. Drawer 1228
Beaufort, SC 29901-1228

Contractor: Applied Technology & Management, Inc.
Edward Modzelewski, Chairman
12 Richland Drive
Bluffton, SC 29909

**ARTICLE 14
CHANGE ORDERS**

Should the Scope of Work as noted in Article 6 of this Contract change as a result of:

- a) County requested changes to the approved Scope of Work, or
- b) Increase in work needed to complete any approved Change Order as a result of unexpected occurrence outside of the control of the Contractor, or
- c) The County requests additional Change Orders from the Contractor

Then the Contractor will prepare and submit to the County an amendment to the applicable Change Order, or where no Change Order is in place of such additional services, the Contractor will prepare a Change Order for the County's review. No additional services will be undertaken by the Contractor without the approval of a Change Order or Change Order Amendment by the County.

**ARTICLE 15
AUDITING**

The Contractor shall make available to the County if requested, true and complete records, which support billing statements, reports, performance indices, and all other related documentation.

The County's authorized representatives shall have access during reasonable hours to all records, which are deemed appropriate to auditing billing statements, reports, performance indices, and all other related documentation. The Contractor agrees that it will keep and preserve for at least seven years all documents related to the Contract, which are routinely prepared, collected or compiled by the Contractor during the performance of this contract.

The County's Auditor and the Auditor's authorized representatives shall have the right at any time to audit all of the related documentation. The Contractor shall make all documentation available for examination at the Auditor's request at either the Auditor or Contractor's office and without expense to the County.

ARTICLE 16 GRATUITIES

The right of the Contractor to proceed or otherwise perform this Contract, and this Contract may be terminated if the County Manager and/or the County Contracting Manager determine, in their sole discretion, that the Contractor or any officer, employee, agent, or other representative whatsoever, of the Contractor offered or gave a gift or hospitality to a County officer, employee, agent or Contractor for the purpose of influencing any decision to grant a County Contract or to obtain favorable treatment under any County Contract.

The terms "hospitality" and "gift" include, but are not limited to, any payment, subscription, advance, forbearance, acceptance, rendering or deposit of money, services, or items of value given or offered, including but not limited to food, lodging, transportation, recreation or entertainment, token or award.

ARTICLE 17 INVOICES

All invoices for work done under this Contract should be directed to the County Representative, Eric W. Larson, PE, CPSWQ, AICP, CFM – Director of Environmental Engineering

Located at: Beaufort County Stormwater Utility
 120 Shanklin Road
 Beaufort, S.C. 29906

Invoices should include:

- a) Period of time covered by the invoice
- b) Summary of work performed for the billing period
- c) Purchase order and Contract Number
- d) Tax Identification Number

Unless otherwise indicated, all invoices must be timely and accurate. The Contractor will make periodic requests for payment for this Contract and approved Change Orders. Invoices will be itemized by Scope of Work tasks and Change Order number.

ARTICLE 18 PURCHASE ORDERS

The County will issue Purchase Orders from properly executed requisitions for this Contract and each approved Change Order. The County shall not be responsible for invoices of \$500 or more that do not have a purchase order covering them.

ARTICLE 19
ORDER OF DOCUMENTS

The following are incorporated into and made a part of this contract by reference:

- a) Request for Proposal Number 07022015
- b) Addendum #1 dated June 23, 2015
- c) Applied Technology & Management, Inc. Proposal Submission to RFP Number 07022015
- d) ATM Fee Structure dated October 13, 2015
- e) Recommendation Memo to County Council dated November 2, 2015

SIGNATURE PAGE

This Contract with the above Articles constitutes the entire contract between the parties hereto. No representations, warranties or promises pertaining to this Contract have been made or shall be binding upon any of the parties, except as expressly stated herein.

This Contract shall be construed in accordance and governed by the laws of the State of South Carolina.

IN WITNESS WHEREOF, the parties hereto have executed this Contract on the day and year first above written.

WITNESSES:

BEAUFORT COUNTY, a political sub-division of the State of South Carolina

By: _____
Name: Gary Kubic
Title: County Administrator
Address: P.O. Drawer 1228
Beaufort, SC 29901-1228
Phone: (843) 255-2026
Fax: (843) 255-9403
Date: _____

WITNESSES:

CONTRACTOR NAME

By: _____
Name: Edward Modzelewski
Title: Chairman
Address: 12 Richland Drive
Bluffton, SC 29909
Phone: 843-290-0980
Fax: 843-414-0155
Tax ID Number: 59213268
Date: _____



The following fees will apply to all work performed by the ATM Team and will not be subject to change until June 1, 2017.

Principal Engineer/Scientist/Technical Advisor	\$ 165.00 / hr
Senior Engineer/Modeler	\$ 165.00 / hr
Engineer (PE)	\$ 135.00 / hr
Staff Modeler	\$ 100.00 / hr
Associate Engineer (EIT)	\$ 100.00 / hr
Biologist	\$ 100.00 / hr
GIS Specialist	\$ 100.00 / hr
Draft/CADD	\$ 85.00 / hr
Graphic Designer	\$ 70.00 / hr
Document Coordinator/Technical Editor	\$ 80.00 / hr
Administrative	\$ 65.00 / hr

In addition to the hourly fees, an expense reimbursement multiplier of 5 percent of the total direct expenses associated with travel, subsistence, materials, overnight delivery, and reproduction. Sub-consultant costs will be invoiced at cost plus an administrative management fee of 10 percent.

ATTACHMENT TO SCOPE OF SERVICES
Beaufort County and Municipalities Stormwater SWMP Update Fee Breakdown

13-Oct-15

BEAUFORT COUNTY & MUNICIPALITIES
STORMWATER MANAGEMENT PLAN UPDATE

Final

No.	Task	Hours	Rate	Total	
1	<u>Scoping Meeting with the SWIC</u>				
	Principal	40	\$ 165	\$ 6,600	Scoping meeting with Municipalities, final Scope review with SWIC, NRC and Council Meetings
	Senior Engineer	12	\$ 165	\$ 1,980	
	Senior Modeler	12	\$ 165	\$ 1,980	
	Clerical	0	\$ 65	\$ -	
	Expenses*	0	LS		
	Mileage	1100	\$ 0.58	\$ 633	
	Total 1			\$ 11,193	
2	<u>Review and Analysis of 2006 SWMP</u>				
	Principal	32	\$ 165	\$ 5,280	Review SWMP, outline prep and meeting with SWIC
	Senior Engineer	32	\$ 165	\$ 5,280	Review SWMP modelling
	Senior Modeler	40	\$ 165	\$ 6,600	Review SWMP modelling
	Clerical	0	\$ 65	\$ -	
	Expenses*	0	LS		
	Mileage	0	\$ 0.58	\$ -	
	Total 2			\$ 17,160	
3	<u>Facilitation of Public Meetings (HW)</u>				
	Principal	100	\$ 165	\$ 16,500	Seven Public Meetings, Two SWIC meetings, prepare presentation
	Senior Engineer	80	\$ 165	\$ 13,200	Seven Public Meetings, minutes of meeting, sign-in sheets
	Clerical	21	\$ 65	\$ 1,365	
	Expenses*		LS	\$ 1,400	Hotel, meals, etc.
	Mileage	2900	\$ 0.58	\$ 1,668	
	Total 3			\$ 34,133	
4	<u>Review of Collected Water Quality Data</u>				
	Principal	16	\$ 165	\$ 2,640	Meeting with County to get data, present results
	Senior Engineer	60	\$ 165	\$ 9,900	Review data, organize
	Senior Modeler	132	\$ 165	\$ 21,780	Review data, make recommendations, present results
	GIS/Sr. CAD Designer	24	\$ 100	\$ 2,400	Create GIS layer
	Clerical	8	\$ 65	\$ 520	
	Expenses*		LS	\$ -	
	Mileage	1000	\$ 0.58	\$ 575	

	Total 4			\$ 37,815	
	<u>5 Collect Previous WQ & Hydro Modeling Information</u>				
	Prinicpal	16	\$ 165	\$ 2,640	Meeting with County to collect data
	Senior Modeler	96	\$ 165	\$ 15,840	Determination of models to be updated
	GIS/Sr. CAD Designer		\$ 100	\$ -	
	Senior Engineer	96	\$ 165	\$ 15,840	Meeting with County to collect data
	Clerical		\$ 65	\$ -	
	Expenses*		LS	\$ 500	Hotel, meals, etc.
	Mileage	1000	\$ 0.56	\$ 560	
	<u>Develop/Run 7 New Models, Review Remaining</u>				
	Prinicpal	48	\$ 165	\$ 7,920	Kick off meeting with County, SWIC review meeting, meeting with SW staff to review draft results
	Senior Modeler	300	\$ 165	\$ 49,500	Kick off meeting with County, Develop new models, develop results of all models including volume control, SLR and TMDL Considerations
	GIS	80	\$ 100	\$ 8,000	
	Senior Engineer	280	\$ 165	\$ 46,200	Kick off meeting with County, Develop new models, Compile list of improvements
	Clerical	24	\$ 65	\$ 1,560	
	Mileage	3300	\$ 0.56	\$ 1,848	1 Site visit per watershed and kickoff meetings & SWIC and SW Staff meetings
	Total 5			\$ 150,408	
	<u>6 Review and Update CIP</u>				
	Principal	100	\$ 165	\$ 16,500	CIP report, coordination with RFC on schedule costs, Meetings with Municipalities, facilitate Workshop
	Senior Modeler	40	\$ 165	\$ 6,600	CIP report, Meeting with Municipalities
	Senior Engineer (RFC)	24	\$ 165	\$ 3,960	Work on coordination with CSS
	Senior Consultant (RFC)	32	\$ 165	\$ 5,280	Work on coordination with CSS
	Senior Engineer	40	\$ 165	\$ 6,600	CIP report, Meeting with Municipalities, minutes of CIP Workshop Mtg
	Clerical	40	\$ 65	\$ 2,600	
	Expenses*		LS	\$ 1,000	Hotel, meals, etc.
	Mileage	1500	\$ 0.56	\$ 840	
	Total 6			\$ 43,380	
	<u>7 Develop Key Elements of New SW Ordinance</u>				
	Prinicpal	32	\$ 165	\$ 5,280	Review current ordinance, meeting with County to discuss options, define key elements of SW Ordinance
	Senior Engineer	16	\$ 165	\$ 2,640	Draft SW Ordinance, develop specifics for each municipalities
	Senior Engineer (RFC)	8	\$ 165	\$ 1,320	Review ATM recommendations for compliance with CSS

Clerical	32	\$	65	\$	2,080	
Expenses*		LS		\$	-	
Mileage	200	\$	0.58	\$	115	
<i>Develop Recommendations for SW BMP manual (HW)</i>						
Principal	16	\$	165	\$	2,640	Meeting with County to discuss BMP Manual, review technical memo
Senior Engineer	80	\$	165	\$	13,200	Benchmark BMP Manual against other BMP Manuals (look at 2 other BMP Manuals), develop recommendations, check against NOI, Tech memo
Clerical	16	\$	65	\$	1,040	
Expenses*		LS		\$	500	Hotel, Meals, etc
Mileage	800	\$	0.58	\$	460	
Total 7				\$	29,275	
<i>8 Guidance on SW Inventory Completion</i>						
Principal	10	\$	165	\$	1,650	Meeting with County to develop program
Senior Engineer	75	\$	165	\$	12,375	Meet with County and GIS staff, review all data, organize, determine priority areas
GIS/Sr. CAD Designer	40	\$	100	\$	4,000	Review data, create priority area layer
Clerical	16	\$	65	\$	1,040	
Expenses*		LS		\$	-	
Mileage	1000	\$	0.56	\$	560	
Total 8				\$	19,625	
<i>9 Review Revise LOS</i>						
Principal	24	\$	165	\$	3,960	Review current LOS with County & muni, make recommendations
Senior Engineer	16	\$	165	\$	2,640	Check against NOI, Review and recommend changes to LOS, Tech memo
Senior Engineer (RFC)	8	\$	165	\$	1,320	Check against CCS
Clerical	8	\$	65	\$	520	
Expenses*		LS		\$	-	
Mileage	0	\$	0.58	\$	-	
<i>Review Revise EOS</i>						
Principal	16	\$	165	\$	2,640	Review current EOS with County, make recommendations
Senior Engineer	16	\$	165	\$	2,640	Check against NOI, Review and recommend changes to EOS, Tech memo
Senior Engineer (RFC)	8	\$	165	\$	1,320	Check against CCS
Clerical	8	\$	65	\$	520	
Expenses*		LS		\$	-	
Mileage	0	\$	0.58	\$	-	

Total 9				\$ 15,560	
10	<u>Develop SWMP Operational Plan</u>				
Principal	40	\$ 165	\$ 6,600		Review County Prepared Operational Plan docs
Senior Modeler	16	\$ 165	\$ 2,640		Supply sample Operational Plans
Senior Engineer	40	\$ 165	\$ 6,600		Develop recommendations tech memo
Clerical	8	\$ 65	\$ 520		
Expenses*		LS	\$ -		
Mileage	200	\$ 0.56	\$ 112		
Total 10			\$ 16,472		
11	<u>Report Development and Presentations</u>				
Principal	140	\$ 165	\$ 23,100		Review report, 12 presentations/meetings
Senior Modeler	100	\$ 165	\$ 16,500		Write and edit SWMP
Senior Engineer	100	\$ 165	\$ 16,500		Write and edit SWMP
Clerical	120	\$ 65	\$ 7,800		
Expenses*		LS	\$ 1,500		Reproduction, Hotel, Meals, etc.
Mileage	2500	\$ 0.56	\$ 1,400		12 trips to Beaufort County sites
Total 11			\$ 66,800		

Total all Tasks \$ 441,820.00

Contingency** \$ 33,180.00

Grand Total Project Estimate \$ **475,000.00**

*Includes 5% mark up on Actual Expenses

** 10% mark up on Sub-Consultant costs will be charged against the Contingency once the actual hours of Sub-Consultant time are determined

Beaufort County Stormwater Management Plan Update																					
Projected Project Schedule Sept. 29, 2015																					
Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Date	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	17-Jun
Task																					
1 Scoping Meeting with the SWIC	█																				
2 SWIC, NRC & Countil approval process		█																			
2 Review and Analysis of 2006 SWMP			█																		
3 Facilitation of Public Meetings (HW)			█	█																	
4 Review of Collected Water Quality Data				█	█																
5 Collect Previous WQ & Hydro Modeling Information/ Update Models				█	█	█	█	█	█	█	█	█	█	█	█						
6 Review and Update CIP													█	█	█	█					
7 Develop Key Elements of New SW Ordinance/ SW BMP Manual														█	█	█	█				
8 Guidance on SW Inventory Completion			█	█	█	█	█														
9 Review Revise LOS/EOS															█	█	█				
10 Develop SWMP Operational Plan																	█	█	█		
11 Report Development and Presentations																			█	█	█



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

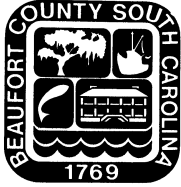


October 21, 2015

Stormwater Manager's Report for the Stormwater Utility Board Meeting

Regional Coordination

1. Battery Creek Pond Funded by an EPA 319 Grant (\$132,609 Budget – County Portion) – No update to report. (Lamar Taylor may also report)
2. May River Watershed Action Plan – (Jeremey Ritchie or Kim Jones may report) Town Council passed a Resolution to adopt the May River Watershed Sewer Master Plan as a supporting document to the May River Watershed Action Plan.
3. Stoney Creek Project – No update to report.
4. Pine Ridge Retrofit Project – No update to report.
5. Buckingham Plantation Drive Innovation District Conceptual Design Study (\$25,000 Budget – SWU Portion) – Project is on hold pending funding to match the SWU portion.
6. SC 170 Widening – Nothing new to report.
7. City of Beaufort Stormwater Assistance MOU – No further progress to report.
8. Factory Creek watershed regional detention basin & Academy Park Subdivision proposal. – This item will be discussed in Executive Session.
9. Mr. Larson met with the City of Beaufort and SCDOT on numerous stormwater projects in the City that the City needs the County and State partnership on. The County would be reimbursed for some of the work being proposed. The City is currently working on designs and budgets.



MEMORANDUM

Date: October 21, 2015

To: Stormwater Management Utility Board

From: Eddie Bellamy, Public Works Director

Re: **Maintenance Project Report for October 2015**

1. This report will cover one major and 15 minor or routine projects. The Project Summary Reports are attached.

2. Major Project:

- A. **Irongate Subdivision**, completed in July in Burton, District 6; we improved 943 feet of drainage system. We cleaned out two catch basins and 165 feet of channel and installed four catch basins and 528 feet of roadside pipe. We replaced four driveways that we removed for the job and installed rip-rap and sod and hydroseeded for erosion control. We also jetted two crossline pipes and 250 feet of channel pipe. Total cost of the project was **\$129,666**.

3. Minor or Routine Projects:

- A. **Jenkins Port Road**, completed in June in District 8; we cleaned out 150 feet of roadside ditch and upsized two driveway pipes.
- B. **Mint Farm Subdivision Pond**, completed in June in District 6; we dewatered the pond to a safe level.
- C. **Old Dawson Acres**, completed in June in District 5, we reset a catch basin lid.
- D. **Paukie Island Road**, completed in July in District 6; we repaired a sinkhole.
- E. **Brilliant Lane Channel #1**, completed in July in District 6; we bush hogged 430 feet of channel, cleaned out 686 feet of channel and 1,454 feet of roadside ditch, and jetted one access, three crossline, and nine driveway pipes.
- F. **Lady's Island Bush Hogging**, completed in July in District 7; we bush hogged 25,033 feet of channel and associated work shelves. Total cost was **\$16,668** or **\$.67/foot**.
- G. **Harding Street Outfall**, completed in July in District 6; we repaired a washout and jetted 250 feet of channel pipe.
- H. **Taylor Street and Peace Haven Drive**, completed in July in District 6; we cleaned out 350 feet of channel and 844 feet of roadside ditch and jetted one crossline and three driveway pipes.
- I. **Pinewood Circle Channel#1/Mroz Road**, completed in July in District 6; we cleaned out 1,110 feet of channel and 670 feet of roadside ditch and upsized one access pipe.

- J. **Burton Wells Road**, completed in July in District 6; we replaced 16 feet of a crossline pipe and repaired a washout.
- K. **Stellata Lane and Grandiflora Lane**, completed in July in District 7, we removed blockages from the flowline by hand.
- L. **Huron Drive**, completed in July in District 6, we removed blockages from the flowline by hand.
- M. **Eddings Point Road Channel #1**, completed in August in District 8, we cleaned out 300 feet of channel and reconstructed 200 feet of workshelf.
- N. **Simmons Road Channel**, completed in August in District 8, we cleaned out 2,160 feet of channel and jetted one crossline and one access pipe.
- O. **Mayfair Court**, completed in August in District 7, we reconstructed, or refreshed, two French drains.



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

Project Summary: Irongate Subdivision - Blacksmith Circle

Activity: Drainage Improvement

Narrative Description of Project:

Project improved 943 L.F. of drainage system. Cleaned out (2) catch basins and 165 L.F. of channel. Installed (4) catch basins and 528 L.F. of roadside pipe. Replaced (4) driveways. Installed rip rap, sod and hydroseeded for erosion control. Jetted (2) crossline pipes and 250 L.F. of channel pipe.

Completion: Jul-15

2015-020 / Irongate Subdivision	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	2.0	\$46.98	\$0.00	\$0.00	\$0.00	\$26.46	\$73.44
BKFILL / Back Fill	55.0	\$1,340.40	\$601.18	\$149.21	\$0.00	\$917.40	\$3,008.19
CBCO / Catch basin - clean out	56.0	\$1,287.63	\$148.24	\$94.82	\$0.00	\$830.79	\$2,361.48
CBINS / Catch basin - installed	20.0	\$484.80	\$162.20	\$41.55	\$0.00	\$333.60	\$1,022.15
CBIR / Catch Basin - Inlet Raised	85.0	\$1,974.42	\$150.32	\$286.07	\$0.00	\$1,254.30	\$3,665.11
CPJ / Channel Pipe - Jetted	6.0	\$133.70	\$26.04	\$25.60	\$0.00	\$86.04	\$271.38
DWR / Dewatered Road	60.5	\$1,452.12	\$107.97	\$49.16	\$0.00	\$962.19	\$2,571.44
ERCON / Erosion control	60.0	\$1,371.00	\$35.40	\$19.20	\$0.00	\$895.10	\$2,320.70
HAUL / Hauling	346.0	\$7,612.18	\$2,780.52	\$9,248.23	\$0.00	\$5,030.32	\$24,671.25
HYDR / Hydroseeding	18.0	\$418.12	\$47.84	\$130.81	\$0.00	\$272.64	\$869.41
ONJV / Onsite Job Visit	202.0	\$6,603.19	\$717.64	\$196.56	\$0.00	\$4,285.66	\$11,803.05
PI / Project Inspection	2.5	\$114.00	\$9.05	\$6.48	\$0.00	\$84.90	\$214.43
PL / Project Layout	8.0	\$354.16	\$28.96	\$15.12	\$0.00	\$271.68	\$669.92
PP / Project Preparation	93.0	\$2,153.49	\$174.28	\$43.97	\$0.00	\$1,428.57	\$3,800.31
PROFS / Professional Services	0.0	\$0.00	\$0.00	\$0.00	\$4,920.40	\$0.00	\$4,920.40
PRRECON / Project Reconnaissance	9.0	\$213.03	\$10.62	\$6.36	\$0.00	\$136.17	\$366.18
RRI / Rip Rap - Installed	35.0	\$821.55	\$75.16	\$41.90	\$0.00	\$520.05	\$1,458.67
RSPI / Roadside Pipe - Installed	843.5	\$19,058.74	\$3,728.36	\$10,833.14	\$0.00	\$12,337.21	\$45,957.45
RSPJ / Roadside Pipe - Jetted	20.0	\$467.90	\$86.80	\$39.68	\$0.00	\$317.40	\$911.78
SD / Soft Digging	36.0	\$754.84	\$104.84	\$37.38	\$0.00	\$493.68	\$1,390.74
SG / Shoot Grade	5.5	\$137.28	\$37.75	\$8.48	\$0.00	\$91.74	\$275.25
SI / Sod - Installation	174.0	\$4,150.30	\$542.12	\$2,646.34	\$0.00	\$2,620.10	\$9,958.85
SODW / Sod - Watered	20.5	\$482.30	\$63.87	\$61.46	\$0.00	\$308.71	\$916.34
STAGING / Staging Materials	40.0	\$876.64	\$223.55	\$84.80	\$0.00	\$592.20	\$1,777.19
UC / Utility Coordination	5.0	\$221.35	\$18.10	\$8.64	\$0.00	\$169.80	\$417.89
UTLOC / Utility locates	6.0	\$123.24	\$7.08	\$4.32	\$0.00	\$79.80	\$214.44
WSDR / Workshelf - Dressed	82.0	\$2,028.60	\$352.66	\$118.12	\$0.00	\$1,279.24	\$3,778.63
2015-020 / Irongate Subdivision	2,290.5	\$54,681.96	\$10,240.55	\$24,197.40	\$4,920.40	\$35,625.74	\$129,666.05
Sub Total							
Grand Total	2,290.5	\$54,681.96	\$10,240.55	\$24,197.40	\$4,920.40	\$35,625.74	\$129,666.05

Before

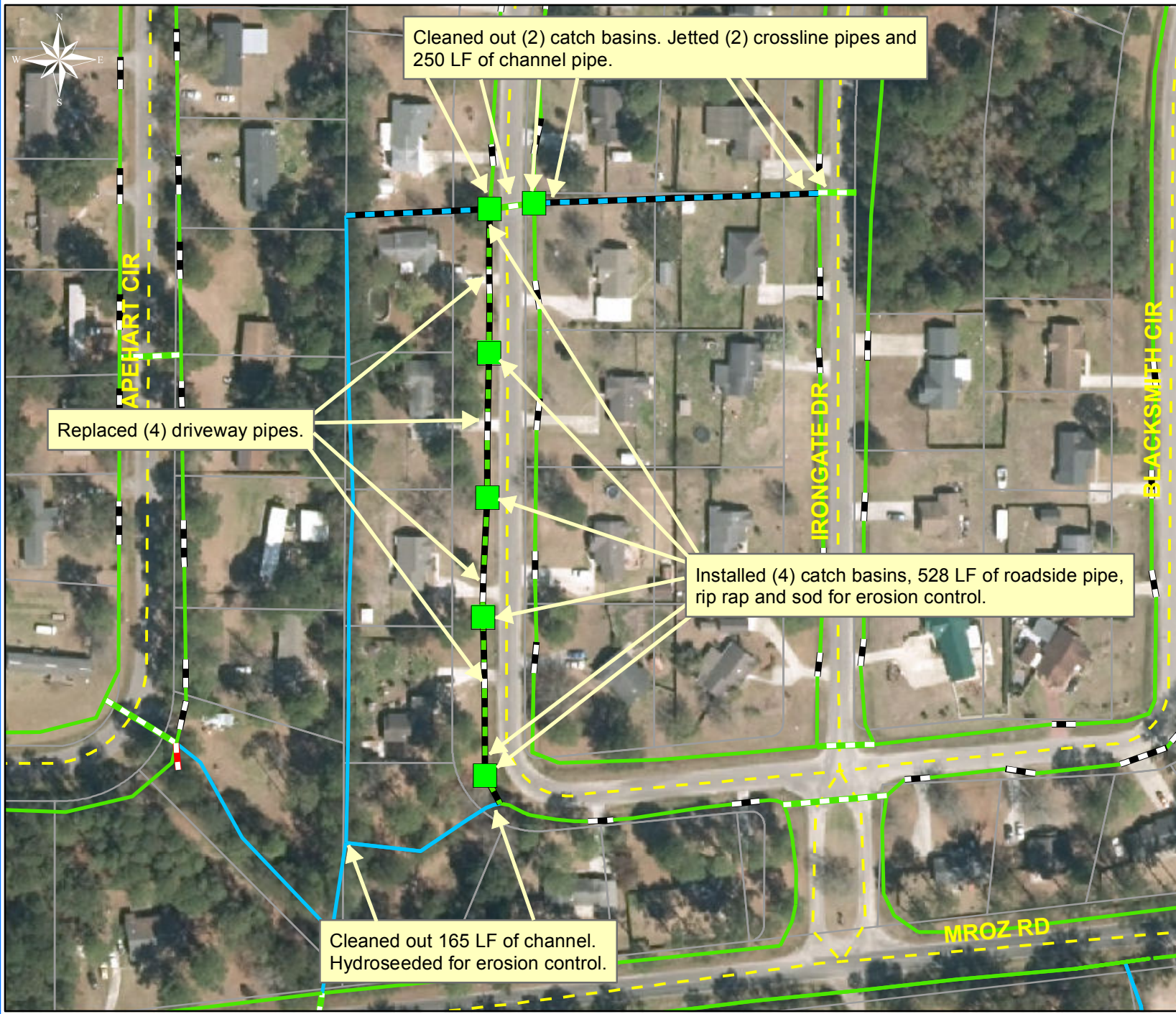


During



After





Project: Irongate Subdivision-Blacksmith Circle

Activity: Routine/Preventive Maintenance

Project #: 2015-020

Township: Port Royal Island

Completed: July 2015

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



1 inch = 130 feet

Prepared By: BC Stormwater Management Utility
Date Print: 07/27/2015

File: C:\project summaries map\Irongate Subdivision- Blacksmith Circle 2015-020



Beaufort County Public Works Stormwater Infrastructure Project Summary

Project Summary: Jenkins Port Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 198 L.F. of drainage system. Cleaned out 150 L.F. of roadside ditch. Upsized (2) driveway pipes. Installed rip rap for erosion control.

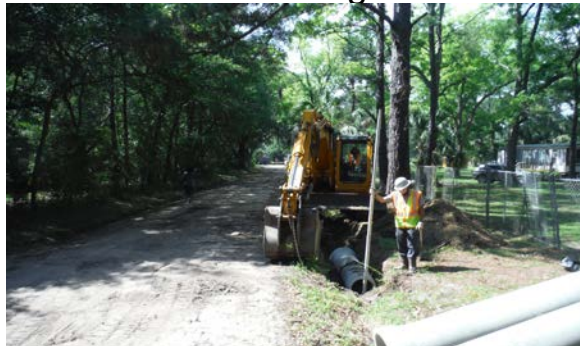
Completion: Jun-15

2015-620 / Jenkins Port Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
DPUP / Driveway Pipe - Upsized	42.0	\$983.34	\$233.34	\$546.31	\$0.00	\$631.89	\$2,394.88
HAUL / Hauling	56.0	\$1,203.09	\$423.96	\$1,013.18	\$0.00	\$813.54	\$3,453.77
ONJV / Onsite Job Visit	10.0	\$298.40	\$35.40	\$12.96	\$0.00	\$182.30	\$529.06
RPWO / Repaired Washout	20.0	\$432.65	\$17.70	\$10.15	\$0.00	\$285.90	\$746.40
UTLOC / Utility locates	0.5	\$10.53	\$0.00	\$0.00	\$0.00	\$6.11	\$16.64
2015-620 / Jenkins Port Road Sub Total	129.0	\$2,939.76	\$710.40	\$1,582.59	\$0.00	\$1,926.35	\$7,159.10
Grand Total	129.0	\$2,939.76	\$710.40	\$1,582.59	\$0.00	\$1,926.35	\$7,159.10

Before



During



After





Project: Jenkins Port Road

Activity: Routine/ Preventive Maintenance

Project #: 2015-620

Township: St. Helena Island

Completed: June 2015

Legend

Drainage Type

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



1 inch = 130 feet



Beaufort County Public Works Stormwater Infrastructure Project Summary

Project Summary: Mint Farm Subdivision Pond

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Dewatered pond to safe elevation.

Completion: Jun-15

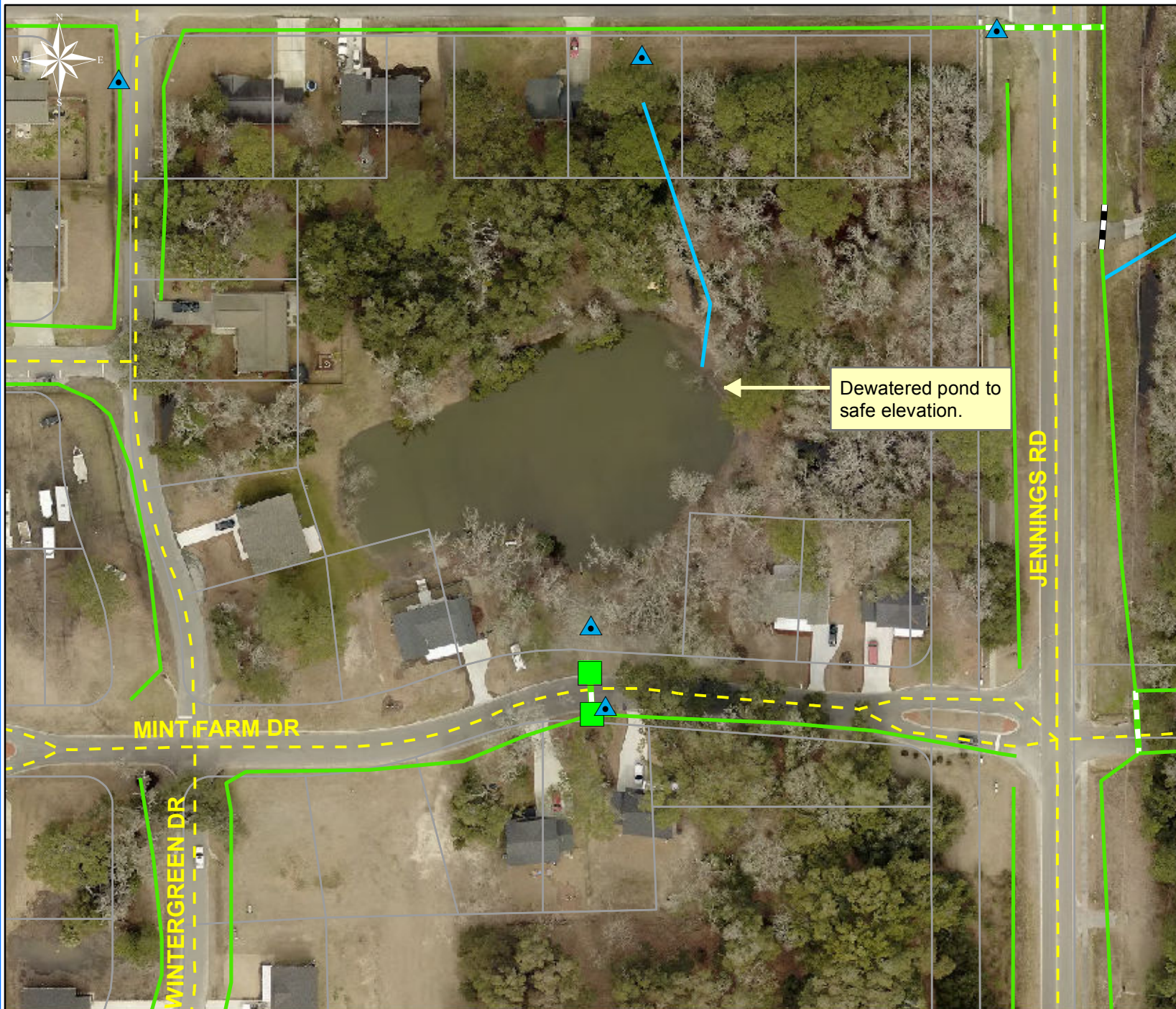
2015-321 / Mint Farm Subdivision Pond	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
DWP / Dewatered Pond	84.0	\$1,962.97	\$95.90	\$43.07	\$0.00	\$1,305.67	\$3,407.61
ONJV / Onsite Job Visit	9.0	\$297.42	\$32.02	\$22.70	\$0.00	\$195.53	\$547.67
PRRECON / Project Reconnaissance	2.0	\$59.68	\$7.08	\$2.27	\$0.00	\$36.46	\$105.49
2015-321 / Mint Farm Subdivision Pond Sub Total	95.5	\$2,331.82	\$135.00	\$68.04	\$0.00	\$1,544.27	\$4,079.13
Grand Total	95.5	\$2,331.82	\$135.00	\$68.04	\$0.00	\$1,544.27	\$4,079.13

Before



After





Project: Mint Farm Suidivision Pond

Activity: Routine/ Preventive Maintenance

Project #: 2015-321

Township: Port Royal Island

Completed: March 2015

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



1 inch = 96 feet



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Old Dawson Acres

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Reset (1) catch basin lid.

Completion: Jun-15

2015-628 / Old Dawson Acres	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CBLRE / Catch Basin Lid - Reset	8.0	\$180.60	\$17.68	\$11.30	\$0.00	\$121.26	\$330.84
2015-628 / Old Dawson Acres Sub Total	8.5	\$192.35	\$17.68	\$11.30	\$0.00	\$127.88	\$349.20
Grand Total	8.5	\$192.35	\$17.68	\$11.30	\$0.00	\$127.88	\$349.20

Before



After





Project: Old Dawson Acres

Activity: Routine/ Preventive Maintenance














Project #: 2015-628

Township: Sheldon

Completed: June 2015

Legend

Drainage Type

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



1 inch = 83 feet

Prepared By: BC Stormwater Management Utility
 Date Print: 06/29/15
 File: C:\project summaries map\Old Dawson Acres_2015-628



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Paukie Island Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:
 Repaired sinkhole.

Completion: Jul-15

2015-511 / Paukie Island	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
APREP / Asphalt Preparation	12.0	\$264.48	\$28.82	\$25.44	\$0.00	\$169.11	\$487.85
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
HAUL / Hauling	7.0	\$160.65	\$55.93	\$362.66	\$0.00	\$100.94	\$680.18
ONJV / Onsite Job Visit	3.0	\$101.54	\$10.70	\$12.96	\$0.00	\$73.41	\$198.61
PI / Project Inspection	1.0	\$44.27	\$3.62	\$2.16	\$0.00	\$33.96	\$84.01
PRRECON / Project Reconnaissance	4.0	\$88.87	\$7.24	\$11.23	\$0.00	\$59.40	\$166.74
SR / Sinkhole repair	33.0	\$697.00	\$100.00	\$449.85	\$0.00	\$460.53	\$1,707.38
2015-511 / Paukie Island Sub Total	60.5	\$1,368.56	\$206.31	\$864.30	\$0.00	\$903.97	\$3,343.14
Grand Total	60.5	\$1,368.56	\$206.31	\$864.30	\$0.00	\$903.97	\$3,343.14

Before



During



After





Project: Paukie Island Road

Activity: Routine/ Preventive Maintenance

Project #: 2015-511

Township: Port Royal Island

Completed: July 2015

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



1 inch = 130 feet



Beaufort County Public Works Stormwater Infrastructure Project Summary

Project Summary: Brilliant Lane Channel #1

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Completion: Jul-15

Project improved 2,140 L.F. of drainage system. Bush hogged 430 L.F. of channel. Cleaned out 686 L.F. of channel and 1,454 L.F. of roadside ditch. Jetted (1) access pipe, (3) crossline pipes and (9) driveway pipes

2015-596 / Brilliant Lane Channel #1	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	70.0	\$1,559.78	\$160.69	\$230.27	\$0.00	\$1,011.30	\$2,962.04
CLPJT / Crossline Pipe - Jetted	26.0	\$579.36	\$112.84	\$59.68	\$0.00	\$372.84	\$1,124.72
HAUL / Hauling	47.5	\$1,058.30	\$379.53	\$137.80	\$0.00	\$684.95	\$2,260.58
ONJV / Onsite Job Visit	18.0	\$649.50	\$63.96	\$47.52	\$0.00	\$468.93	\$1,229.91
RSDCL / Roadside Ditch - Cleanout	72.0	\$1,593.34	\$213.39	\$65.46	\$0.00	\$1,029.24	\$2,901.43
SG / Shoot Grade	6.0	\$132.64	\$7.08	\$4.24	\$0.00	\$88.32	\$232.28
UTLOC / Utility locates	0.5	\$12.35	\$0.00	\$0.00	\$0.00	\$6.62	\$18.97
2015-596 / Brilliant Lane Channel #1 Sub Total	240.5	\$5,597.01	\$937.49	\$544.97	\$0.00	\$3,668.81	\$10,748.28
Grand Total	240.5	\$5,597.01	\$937.49	\$544.97	\$0.00	\$3,668.81	\$10,748.28

Before



During



After





Project: Brilliant Lane
 Map 1

Activity: Vacuum Truck

Project #: 2016-596

Township: Port Royal Island

Completed: July 2015

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



1 inch = 140 feet



Project: Brilliant Lane
 Map 2

Activity: Routine/
 Preventive
 Maintenance

Project #:
 2016-596

Township:
 Port Royal Island

Completed:
 July 2015

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



1 inch = 140 feet



Project: Brilliant Lane Map3

Activity: Routine/ Preventive Maintenance

Project #: 2016-596

Township: Port Royal Island

Completed: July 2015

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



1 inch = 100 feet



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Ladys Island Bush Hog

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Completion: Jul-15

First rotation. Project improved 25,033 L.F. of drainage system. Bush hogged 25,033 L.F. of channel. This project consisted of the following areas: Chowan Creek Bluff (1,044 L.F.), Old Distant Island Road (634 L.F.), Beautyberry Lane (2,514 L.F.), Airport Circle (2,702 L.F.), Eustis Landing Road (819 L.F.), Faculty Drive (1,956 L.F.), Alumni Road (2,076 L.F.), Holly Hall Road (414 L.F.), Honeysuckle Lane (772 L.F.), Sheppard Road (302 L.F.), Token Lane (875 L.F.), Lucy Creek Drive (318 L.F.), Shallowford Downs (340 L.F.), Hewlett Road (1,092 L.F.), Royal Pines Boulevard (1,488 L.F.), Wade Hampton Drive (974 L.F.), Pickens Street (588 L.F.), Thomas Sumpter Street (2,748 L.F.), Jasper Lane (595 L.F.), Francis Marion Circle (505 L.F.), Deveaux Road (185 L.F.), Brickyard Point Road North (457 L.F.), Pleasant Point Drive (1,363 L.F.) and Sams Point Road (272 L.F.)

2016-302 / Ladys Island Bush Hog	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	1.0	\$23.49	\$0.00	\$0.00	\$0.00	\$13.23	\$36.72
CBH / Channel- bushhogged	298.5	\$6,647.56	\$3,098.18	\$687.80	\$0.00	\$4,285.30	\$14,718.84
ONJV / Onsite Job Visit	17.0	\$581.06	\$60.18	\$62.64	\$0.00	\$415.99	\$1,119.87
STBY / Stand By	20.0	\$445.66	\$35.40	\$25.06	\$0.00	\$286.80	\$792.92
2016-302 / Ladys Island Bush Hog	336.5	\$7,697.77	\$3,193.76	\$775.50	\$0.00	\$5,001.32	\$16,668.35
Sub Total							
Grand Total	336.5	\$7,697.77	\$3,193.76	\$775.50	\$0.00	\$5,001.32	\$16,668.35

Before



During



After





Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Harding Street

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 250 L.F. of drainage system. Repaired washout. Jetted 250 L.F. of channel pipe.
 Installed rip rap for erosion control.

Completion: Jul-15

2016-508 / Harding Street	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CPJ / Channel Pipe - Jetted	4.0	\$89.13	\$17.36	\$18.80	\$0.00	\$57.36	\$182.65
HAUL / Hauling	5.0	\$111.40	\$39.95	\$782.05	\$0.00	\$72.10	\$1,005.50
RPWO / Repaired Washout	20.0	\$442.59	\$50.96	\$56.72	\$0.00	\$285.90	\$836.17
2016-508 / Harding Street Sub Total	29.5	\$654.87	\$108.27	\$857.57	\$0.00	\$421.97	\$2,042.68
Grand Total	29.5	\$654.87	\$108.27	\$857.57	\$0.00	\$421.97	\$2,042.68

Before



During



After



Project:Harding Street

Activity: Routine/
Preventive
Maintenance

Project #:
2016-508














Township:
Port Royal Island

Completed:
July 2015



Legend

Drainage Type

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



1 inch = 170 feet

Prepared By: BC Stormwater Management Utility

Date Print:07/06/2015

File:C:\project summaries map\Harding Street 2016-508



Beaufort County Public Works Stormwater Infrastructure Project Summary

Project Summary: Taylor Street and Peace Haven Drive

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 1,194 L.F. of drainage system. Cleaned out 350 L.F. of channel and 844 L.F. of roadside ditch. Jetted (1) crossline pipe and (3) driveway pipes.

Completion: Jul-15

2016-510 / Taylor St and Peace Haven Dr	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	15.0	\$337.29	\$67.59	\$30.61	\$0.00	\$219.75	\$655.24
CLPJT / Crossline Pipe - Jetted	6.0	\$133.70	\$26.04	\$28.56	\$0.00	\$86.04	\$274.34
HAUL / Hauling	20.0	\$445.60	\$159.80	\$40.68	\$0.00	\$288.40	\$934.48
ONJV / Onsite Job Visit	6.0	\$205.08	\$21.24	\$24.97	\$0.00	\$146.82	\$398.11
RSDCL / Roadside Ditch - Cleanout	34.0	\$764.17	\$118.55	\$41.44	\$0.00	\$495.48	\$1,419.64
UTLOC / Utility locates	0.5	\$12.35	\$0.00	\$0.00	\$0.00	\$6.62	\$18.97
2016-510 / Taylor St and Peace Haven Dr Sub Total	82.0	\$1,909.94	\$393.22	\$166.26	\$0.00	\$1,249.72	\$3,719.13
Grand Total	82.0	\$1,909.94	\$393.22	\$166.26	\$0.00	\$1,249.72	\$3,719.13

Before



During



After





Project: Taylor Street & Peace Haven Drive

Activity: Routine/ Preventive Maintenance

Project #: 2016-510

Township: Port Royal Island

Completed: July 2015

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



1 inch = 130 feet

Prepared By: BC Stormwater Management Utility
Date Print: 07/15/2015

File: C:\project summaries map\Taylor Street & Peace Haven Drive_2016-510



Beaufort County Public Works Stormwater Infrastructure Project Summary

Project Summary: Pinewood Circle Channel #1/Mroz Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 1,780 L.F. of drainage system. Cleaned out 1,110 L.F. of channel and 670 L.F. of roadside ditch. Upsized (1) access pipe. Installed rip rap and hydroseeded for erosion control.

Completion: Jul-15

2016-514 /Pinewood Circle Ch #1/Mroz Rd	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
APUP / Access pipe - upsized	20.0	\$446.80	\$77.34	\$142.08	\$0.00	\$286.95	\$953.17
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	48.0	\$1,116.05	\$178.63	\$56.60	\$0.00	\$727.56	\$2,078.84
HAUL / Hauling	30.0	\$668.40	\$239.70	\$823.60	\$0.00	\$432.60	\$2,164.30
HYDR / Hydroseeding	8.0	\$186.01	\$19.52	\$52.07	\$0.00	\$121.26	\$378.85
ONJV / Onsite Job Visit	9.0	\$307.62	\$31.86	\$28.08	\$0.00	\$220.23	\$587.79
RRI / Rip Rap - Installed	48.0	\$1,091.40	\$169.76	\$33.12	\$0.00	\$708.06	\$2,002.34
RSDCL / Roadside Ditch - Cleanout	38.0	\$927.88	\$277.61	\$48.76	\$0.00	\$409.32	\$1,663.57
2016-514 /Pinewood Circle Ch #1/Mroz Rd Sub Total	201.5	\$4,755.90	\$994.42	\$1,184.31	\$0.00	\$2,912.59	\$9,847.22
Grand Total	201.5	\$4,755.90	\$994.42	\$1,184.31	\$0.00	\$2,912.59	\$9,847.22

Before



During



After



Project: Pinewood Circle Channel #1/
Mroz Road

Activity: Routine/
Preventive
Maintenance

Project #:
2016-514

Township:
Port Royal Island

Completed:
July 2015



Legend

Drainage Type

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



1 inch = 250 feet

Prepared By: BC Stormwater Management Utility

Date Print: 07/21/2015

File: C:\project summaries map\Pinewood Circle Channe #1/ Mroz Road_2016-514



Beaufort County Public Works Stormwater Infrastructure Project Summary

Project Summary: Burton Wells Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 16 L.F. of drainage system. Replaced 16 L.F. of crossline pipe. Repaired washouts. Installed rip rap and hydroseeded for erosion control.

Completion: Jul-15

2016-516 / Burton Wells Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CPRPL / Crossline Pipe - Replaced	44.0	\$1,014.28	\$154.68	\$454.29	\$0.00	\$659.22	\$2,282.47
HAUL / Hauling	22.0	\$490.16	\$175.78	\$838.45	\$0.00	\$317.24	\$1,821.63
HYDR / Hydroseeding	24.0	\$558.03	\$70.24	\$58.88	\$0.00	\$363.78	\$1,050.93
ONJV / Onsite Job Visit	17.0	\$594.74	\$60.42	\$32.40	\$0.00	\$407.02	\$1,094.58
RRI / Rip Rap - Installed	50.0	\$1,140.64	\$194.44	\$467.83	\$0.00	\$738.60	\$2,541.51
SD / Soft Digging	14.0	\$311.96	\$60.76	\$13.72	\$0.00	\$200.76	\$587.20
2016-516 / Burton Wells Road Sub Total	171.5	\$4,121.56	\$716.32	\$1,865.56	\$0.00	\$2,693.23	\$9,396.67
Grand Total	171.5	\$4,121.56	\$716.32	\$1,865.56	\$0.00	\$2,693.23	\$9,396.67

Before



During



After





Project: Burton Wells Road

Activity: Routine/ Preventive Maintenance

Project #: 2015-516

Township: Port Royal Island

Completed: July 2015

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



1 inch = 210 feet

Prepared By: BC Stormwater Management Utility
 Date Print: 07/15/15
 File: C:\project summaries map\Burton Wells Road_2015-516



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Stellata Lane and Grandiflora Lane

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Removed blockages from flowline by hand.

Completion: Jul-15

2016-521 / Stellata Ln and Grandiflora Ln	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	16.0	\$346.74	\$14.16	\$7.91	\$0.00	\$220.56	\$589.37
HAUL / Hauling	4.0	\$89.12	\$31.96	\$9.04	\$0.00	\$57.68	\$187.80
2016-521 / Stellata Ln and Grandiflora Ln Sub Total	20.5	\$447.61	\$46.12	\$16.95	\$0.00	\$284.86	\$795.53
Grand Total	20.5	\$447.61	\$46.12	\$16.95	\$0.00	\$284.86	\$795.53

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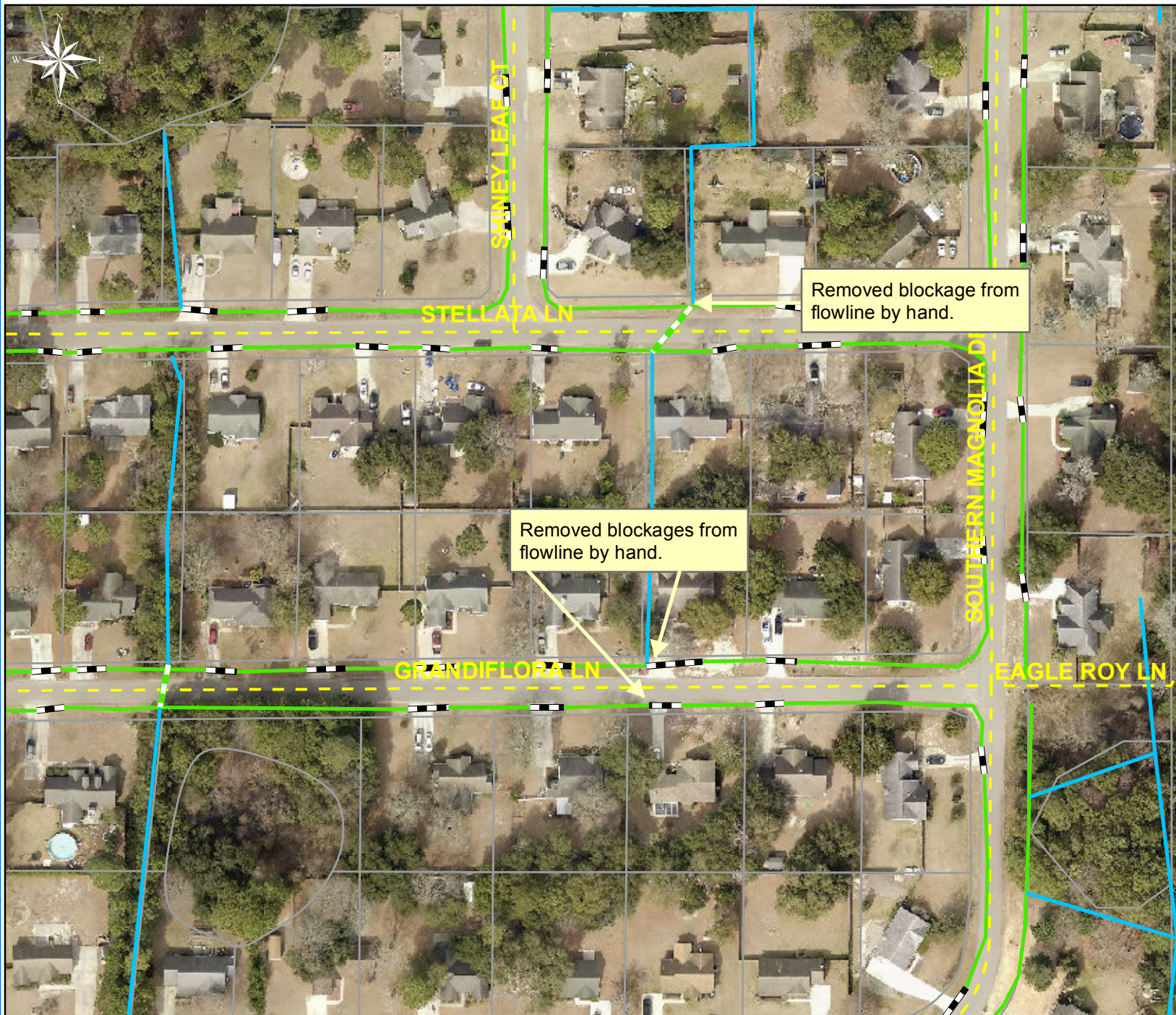
Project: Stellata Lane & Grandiflora Lane

Activity: Routine/ Preventive Maintenance














Project #: 2016-521

Township: Lady's Island

Completed: July 2015



Legend

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



1 inch = 120 feet

Prepared By: BC Stormwater Management Utility
Date Print: 07/22/2015
File: C:\project summaries map\Stellata Lane & Grandiflora Lane_2016-521



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Huron Drive

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Removed blockage from flowline by hand.

Completion: Jul-15

2016-522 / Huron Drive	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
HAUL / Hauling	2.0	\$44.56	\$15.98	\$6.36	\$0.00	\$28.84	\$95.74
RB / Remove blockage from flowline	8.0	\$173.37	\$7.08	\$7.42	\$0.00	\$110.28	\$298.15
2016-522 / Huron Drive Sub Total	10.5	\$229.68	\$23.06	\$13.78	\$0.00	\$145.74	\$412.25
Grand Total	10.5	\$229.68	\$23.06	\$13.78	\$0.00	\$145.74	\$412.25

(Pictures Not Available)



Project: Huron Drive

Activity: Routine/ Preventive Maintenance

Project #: 2016-522

Township: Port Royal Island

Completed: July 2015

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: 07/22/2015
 File: C:\project summaries map\Huron Drive_2016-522



Beaufort County Public Works Stormwater Infrastructure Project Summary

Project Summary: Eddings Point Road Channel #1

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Project improved 300 L.F. of drainage system. Cleaned out 300 L.F. of channel. Reconstructed 200 L.F. of workshelf.

Completion: Aug-15

2015-624 / Eddings Point Road Ch #1	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	20.0	\$442.59	\$74.93	\$43.68	\$0.00	\$285.90	\$847.10
HAUL / Hauling	10.5	\$233.62	\$83.90	\$169.63	\$0.00	\$151.41	\$638.55
ONJV / Onsite Job Visit	5.0	\$190.74	\$17.86	\$12.96	\$0.00	\$141.33	\$362.89
WSREC / Workshelf - Reconstructed	22.5	\$517.19	\$43.18	\$17.28	\$0.00	\$331.47	\$909.13
2015-624 / Eddings Point Road Ch #1 Sub Total	58.5	\$1,395.89	\$219.87	\$243.55	\$0.00	\$916.73	\$2,776.03
Grand Total	58.5	\$1,395.89	\$219.87	\$243.55	\$0.00	\$916.73	\$2,776.03

Before

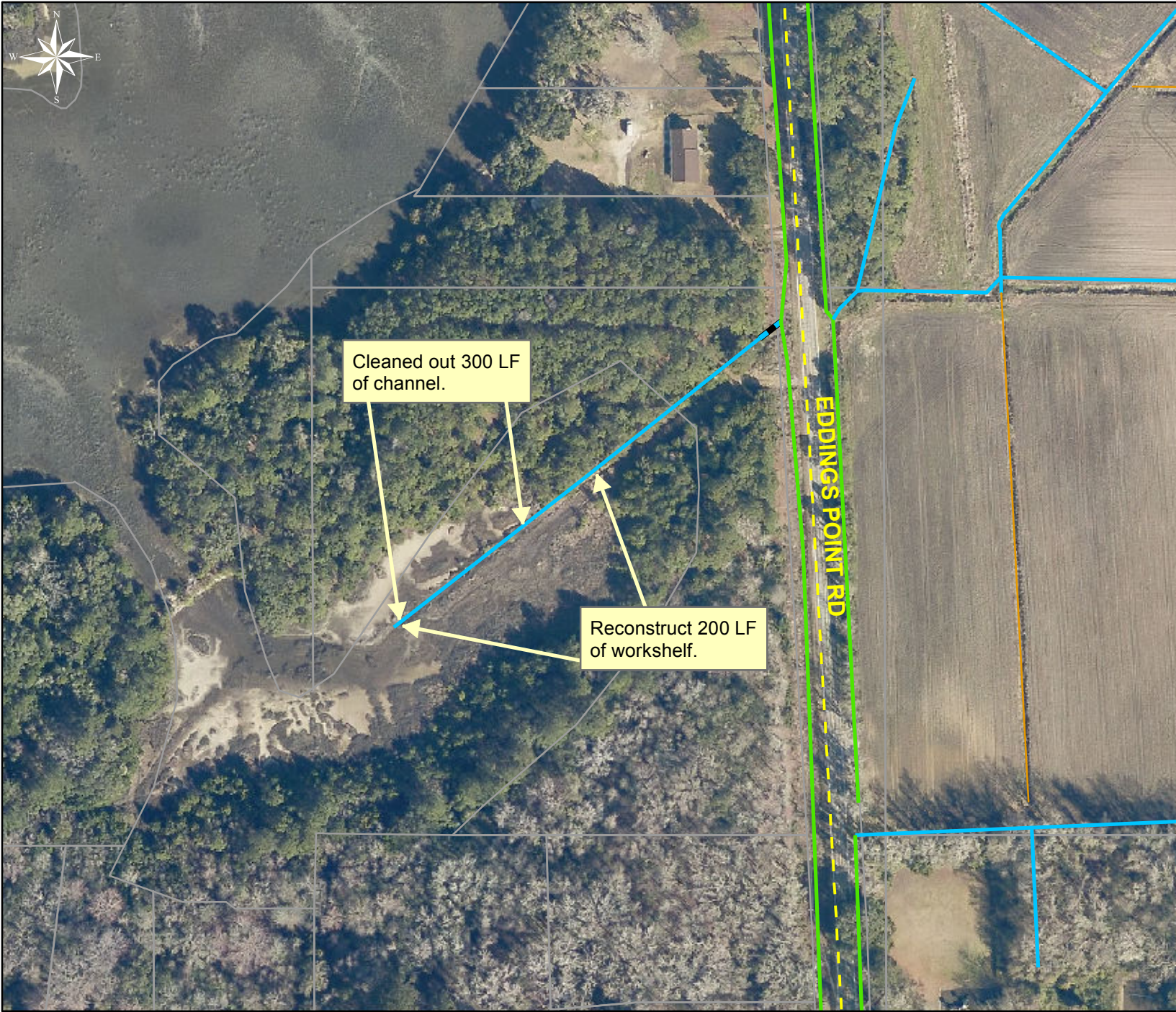


During



After





Project: Eddings Point Road Channel #1

Activity: Routine/ Preventive Maintenance

Project #: 2015-624

Township: St. Helena Island

Completed: July 2015

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



1 inch = 170 feet

Prepared By: BC Stormwater Management Utility

Date Print: 07/07/15

File: C:\project summaries map\Eddings Point Road Channel #1_2015-624



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Simmons Road

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Completion: Aug-15

Project improved 2,160 L.F. Cleaned out 2,160 L.F. of channel. Jetted (1) crossline pipe and (1) access pipe.

2016-524 / Simmons Road	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
APJT / Access pipe - jetted	10.0	\$228.83	\$43.40	\$31.96	\$0.00	\$148.50	\$452.68
AUDIT / Audit Project	0.5	\$11.75	\$0.00	\$0.00	\$0.00	\$6.62	\$18.36
CCO / Channel - cleaned out	120.0	\$2,610.37	\$358.08	\$86.07	\$0.00	\$1,555.74	\$4,610.27
HAUL / Hauling	26.0	\$579.28	\$207.74	\$133.56	\$0.00	\$374.92	\$1,295.50
ONJV / Onsite Job Visit	0.5	\$22.80	\$1.81	\$2.16	\$0.00	\$16.98	\$43.75
2016-524 / Simmons Road Sub Total	157.0	\$3,453.02	\$611.03	\$253.75	\$0.00	\$2,102.75	\$6,420.56
Grand Total	157.0	\$3,453.02	\$611.03	\$253.75	\$0.00	\$2,102.75	\$6,420.56

Before



During



After





Project: Simmons Road

Activity: Routine/ Preventive Maintenance

Project #: 2016-524

Township: St. Helena Island

Completed: August 2015

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



1 inch = 210 feet



Project: Simmons Road

Activity: Vacuum Truck

Project #: 2016-524

Township: St. Helena Island

Completed: August 2015

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



1 inch = 67 feet

Prepared By: BC Stormwater Management Utility
 Date Print: 08/12/2015
 File: C:\project summaries map\Simmons Road_2016-524



Beaufort County
Public Works
Stormwater Infrastructure
Project Summary

Project Summary: Mayfair Court

Activity: Routine/Preventive Maintenance

Narrative Description of Project:

Reconstructed french drains.

Completion: Aug-15

2016-527 / Mayfair Court

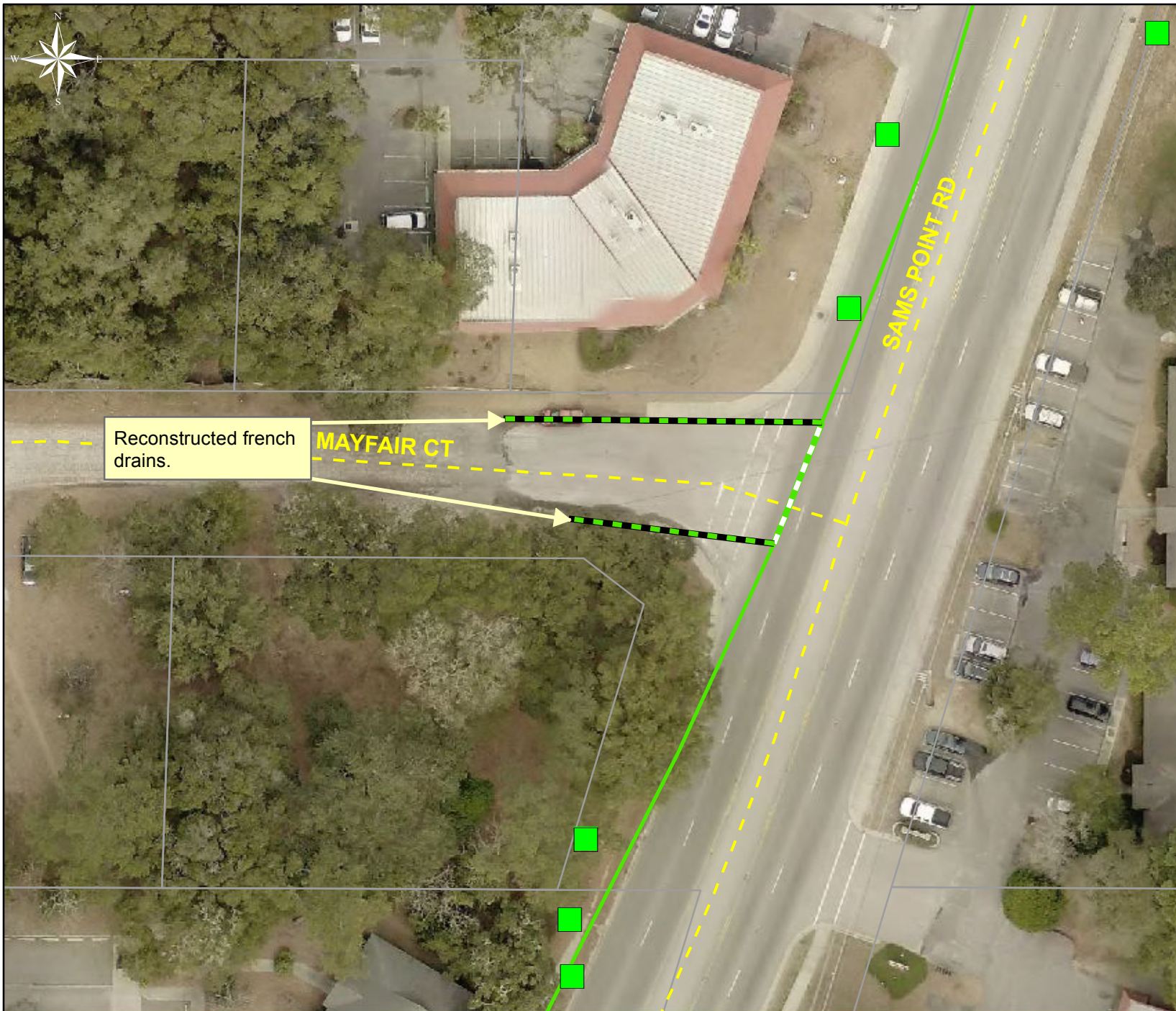
	Labor Hours	Labor Cost	Equipment Cost	Material Cost	Contractor Cost	Indirect Labor	Total Cost
FDRECON / French Drain - Reconstructed	30.0	\$658.85	\$69.02	\$26.62	\$0.00	\$421.20	\$1,175.69
HAUL / Hauling	10.0	\$222.80	\$79.90	\$321.05	\$0.00	\$144.20	\$767.95
ONJV / Onsite Job Visit	7.0	\$215.25	\$24.78	\$6.48	\$0.00	\$127.61	\$374.12
2016-527 / Mayfair Court Sub Total	47.0	\$1,096.90	\$173.70	\$354.15	\$0.00	\$693.01	\$2,317.76
Grand Total	47.0	\$1,096.90	\$173.70	\$354.15	\$0.00	\$693.01	\$2,317.76

Before



During





Project: Mayfair Court

Activity: Routine/ Preventive Maintenance














Project #: 2016-527

Township: Lady's Island

Completed: August 2015

Legend

Drainage Type

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



1 inch = 50 feet

2016

Stormwater Management Utility Board

Draft

<u>Date</u>	<u>Time</u>	<u>Location</u>
January 27, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
February 24, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
March 23, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
April 27, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
May 25, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
July 27, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
August 24, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
September 28, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
October 26, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
November 23, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC
December 14, 2016	2:00 p.m.	Executive Conference Room 170 100 Ribaut Road, Beaufort, SC

MS4 Implementation Permit Year 1 Overview

A Presentation to Beaufort County
Stormwater Utility Board
October 21, 2015



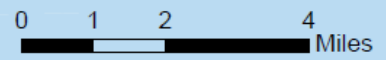
Where is the MS4(s)?

- The Urbanized Area of southern Beaufort County
- Urban Clusters north of the Broad River not included
- Significant overlap between the Towns of Hilton Head Island and Bluffton and unincorporated areas of the County within the Urbanized Area

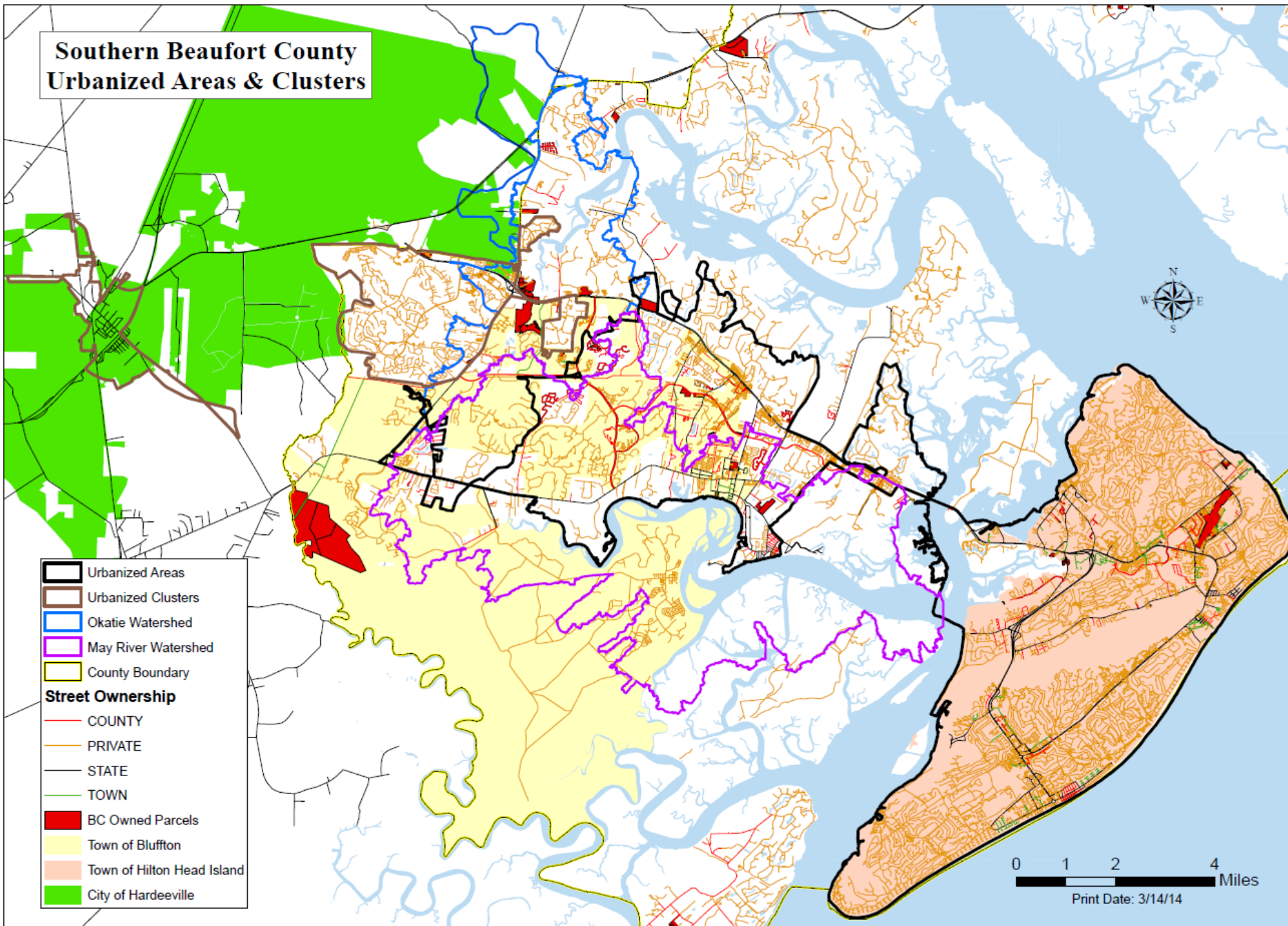


Southern Beaufort County Urbanized Areas & Clusters

- Urbanized Areas
- Urbanized Clusters
- Okatie Watershed
- May River Watershed
- County Boundary
- Street Ownership**
 - COUNTY
 - PRIVATE
 - STATE
 - TOWN
- BC Owned Parcels
- Town of Bluffton
- Town of Hilton Head Island
- City of Hardeeville

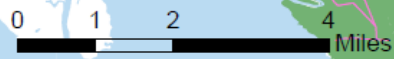


Print Date: 3/14/14

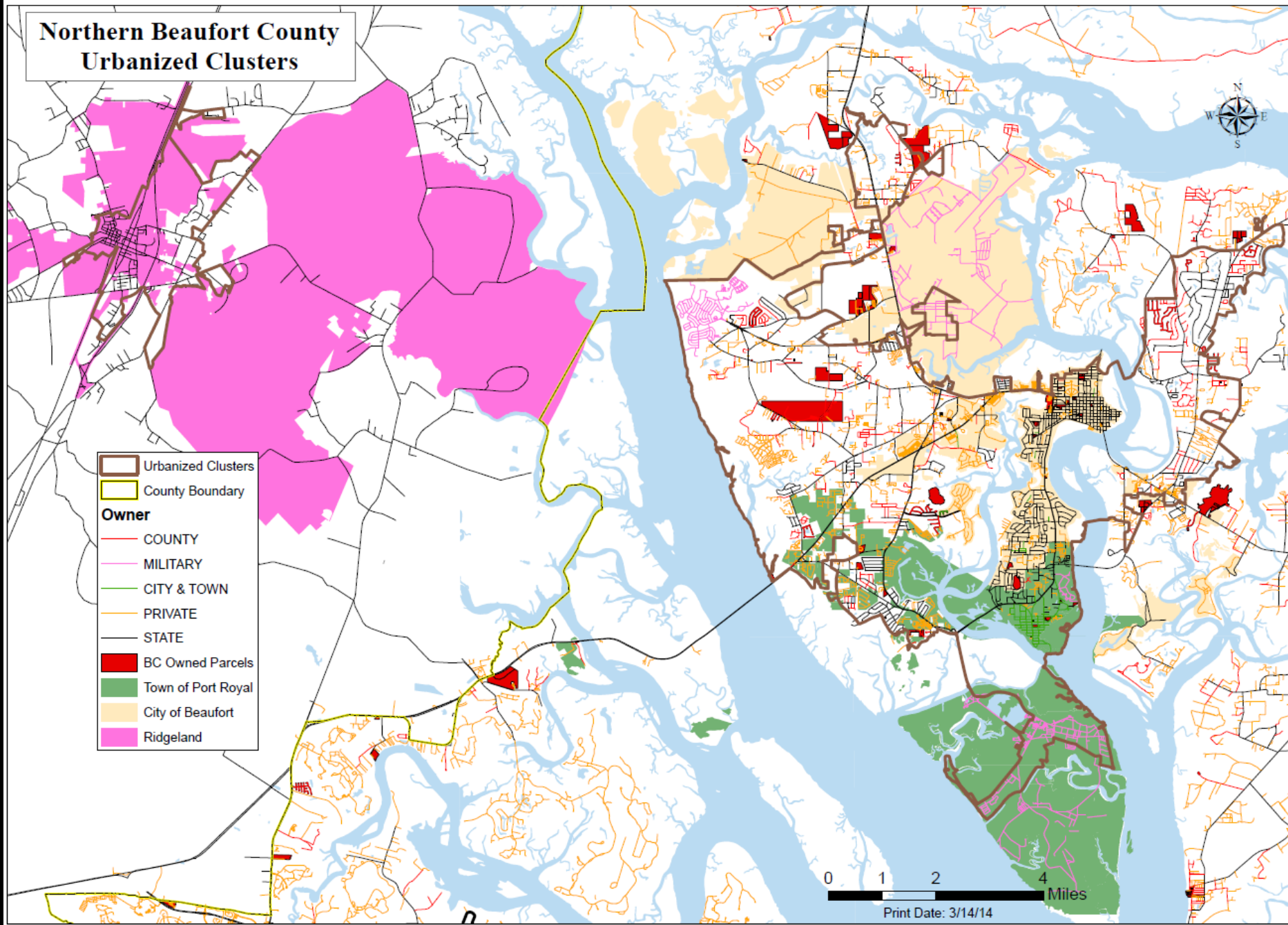


Northern Beaufort County Urbanized Clusters

- Urbanized Clusters
- County Boundary
- Owner**
- COUNTY
- MILITARY
- CITY & TOWN
- PRIVATE
- STATE
- BC Owned Parcels
- Town of Port Royal
- City of Beaufort
- Ridgeland



Print Date: 3/14/14



The MS4 Program Elements

- Minimum Control Measures (MCM)
 1. Public Education
 2. Public Outreach and Involvement
 3. Illicit Discharge, Detection, and Elimination (IDDE)
 4. Construction Run-Off
 5. Post – Construction Best Management Practices (PC-BMP)
 6. Good Housekeeping in Municipal Operations



Staffing

- New Personnel
 - MS4 Coordinator
 - Duties include:
 - Contract management
 - Coordinating various county departments
 - Working with SWIC
 - Permit implementation
 - Infrastructure Inspection Technician
 - Duties focused on inventory and assessment



General Comments from DHEC

- Revise Organizational chart
- Develop an Enforcement Response Plan (ERP) by 11/1/16
- Modify SWMP to match required deadlines in permit (eg. IDDE screening, MCM6 training) by 12/1/16



MCM 1*

* must
begin in PY1

- Develop target pollutants
 - Use sampling data to determine pollutants of concern
- Develop target audience(s)
 - SWIC and BSWD will create a list
- Distribute SW pollution prevention brochures to the public
 - Create general education materials
 - Create a tabletop display for exhibition
- Website, compliant hotline, continued use of kiosks
 - Create a website with reporting link
 - Update and re-deploy the kiosks to the libraries



MCM 1 cont.

- Event participation
 - Train staff to educate the public
 - Attend the Water Festival and other events
- School educational program
 - Create 3 program units for 7th grade level
- Community Survey
 - Do a base line survey of the community. Use website
- Public Input Opportunities
 - Conduct multiple community meeting to gain input on issues



MCM 2

- Storm drain marker program
 - Purchase markers
 - Create inventory of drains to be marked
- Public meeting citizen participation panels
 - Define SOP to do events, identify target areas, conduct first event
- Community Clean up days
 - Define the SOP for a clean up program
- Volunteer speakers
 - Develop a 15 min presentation with speaker notes, train speakers, do pilot speaking events



MCM 3

- Adequate legal authority
 - Begin developing regulatory procedures and ordinance. Include definitions of ID, right of entry, enforcement. Deadline is 11/1/16.
- Outfall inventory mapping
 - Develop software and hardware tools and SOP
- Outfall screening for Illicit discharge
 - Develop screening SOP, list of potential ID, schedule for annual inspections, begin screening. Deadline 11/1/16



MCM 3 cont.

- Prioritize ID and other non-SW discharges
 - Establish SOP to find and track ID. Deadline 11/1/16
- Education on ID
 - Develop educational materials for the public
- Enforcement
 - Establish tracking tools and record keeping
- Monitoring
 - List pollutants of concern and discharge locations in the TMDL watershed(s)



MCM 4

- Adequate legal authority
 - Begin developing regulatory procedures and ordinance. Include definitions of EPSC and SWPPP, right of entry, enforcement. Deadline is 4/1/17.
- Establish EPSC requirements
 - Define technical requirements for SWPPP
- Plan review procedures
 - Define SOP for plan review, permitting, etc.
- Inspection procedures
 - Define SOP for inspection, including enforcement
- Public Inquires / complaints
 - Define SOP for receiving and tracking complaints



MCM 5

- Adequate legal authority
 - Begin developing regulatory procedures and ordinance. Include definitions of BMPs and O&M, right of entry, enforcement. Deadline is 4/1/17.
- Establish BMP requirements
 - Define technical requirements for BMP by revising existing BMP manual
- Plan review procedures
 - Define SOP for plan review, etc.
- Long term BMP O&M
 - Define SOP for annual inspections and reporting for public and private BMPs



MCM 5 cont.

- Inspection procedures
 - Define SOP for inspection, including documentation and enforcement
- Enforcement
 - Define SOP for tracking inspections and enforcement



MCM 6

- SPCC plans
 - Inventory facilities and prioritize
 - Being annual inspections by 11/1/17
- Training programs
 - Establish programs and begin training. Deadline 11/1/16
- Parking lot and street cleaning
 - Inventory and prioritize areas to be swept
- Asset management
 - Define SOP for inventory and assessment



Annual reporting

- Due 12/1/16
 - SWMP revisions
 - Organizational chart
 - Modify MS4 boundary, if needed
 - Assure adequate resources to comply with permit
 - Report monitoring results
 - Outline PY 2





BEAUFORT COUNTY
STORMWATER MANAGEMENT UTILITY BOARD
AGENDA

Wednesday, November 18, 2015
2:00 p.m.

Beaufort Industrial Village, Building 3 Conference Room 104
Industrial Village Road, Beaufort
843.255.2805

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

1. CALL TO ORDER – 2:00 p.m.
 - A. Approval of Agenda
 - B. Approval of Minutes – October 21, 2015 ([backup](#))
2. INTRODUCTIONS
3. PUBLIC COMMENT
4. REPORTS
 - A. Utility Update – Eric Larson, P.E. ([backup](#))
 - B. MS4 Update - Eric Larson, P.E. ([backup](#))
 - C. Monitoring Update – Eric Larson, P.E. ([backup](#))
 - D. Stormwater Implementation Committee Report – Eric Larson, P.E. ([backup](#))
 - E. Stormwater Related Projects – Eric Larson, P.E. ([backup](#))
 - F. Upcoming Professional Contracts Report – Eric Larson, P.E. ([backup](#))
 - G. Regional Coordination – Eric Larson, P.E. ([backup](#))
 - H. Financial Report ([backup](#))
 - I. Maintenance Projects Report – Eddie Bellamy ([backup](#))
5. UNFINISHED BUSINESS
 - A. Presentation of Completed Rate Study for the Municipalities ([backup](#))
6. NEW BUSINESS
 - A. Eric Larson ([backup](#))
7. PUBLIC COMMENT
8. NEXT MEETING AGENDA
 - A. December 16, 2015 ([backup](#))
9. ADJOURNMENT

