

BEAUFORT COUNTY, SC

STORMWATER FUNDING NEEDS and SOLUTIONS

Kentucky
Stormwater
Association
Annual
Conference
June 27-29,
2018



TODAY

- Beaufort County's stormwater program and the growing predicament
- Solution strategies and options
- Analysis and ratemaking
- Outcomes and lessons learned

Item 1 of 4

- Beaufort County's stormwater program and the growing predicament
- Solution strategies and options
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- Outcomes and lessons learned

Beaufort County



- Nearly unique relationship with water
- Utility funding since 2001
- Four incorporated municipalities
- Challenges of unincorporated service area
- Emerging needs for capital, MS4

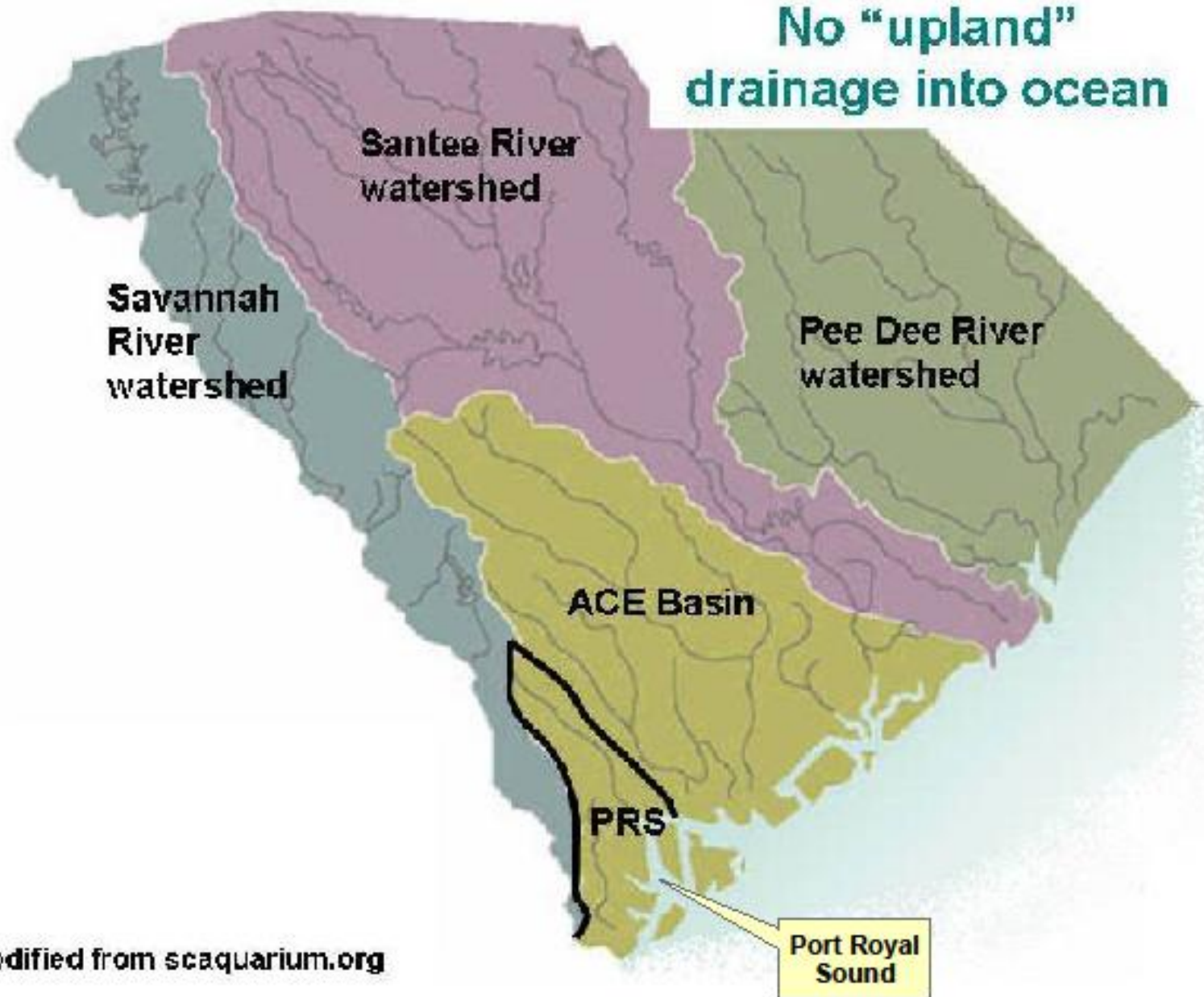


Characteristics

A scenic view of a coastal marshland. In the foreground, there are trees with Spanish moss hanging from their branches. The middle ground shows a large body of water, possibly a bay or estuary, with a marshy area in front of it. The background features a line of trees under a blue sky with some clouds.

- **Coastal Economy**
- **50% Open and Salt Marshes**
- **Limited Freshwater Input**
- **Major Shellfish Harvesting**
- **Rapid Population Growth**

**No "upland"
drainage into ocean**



Modified from scaquarium.org

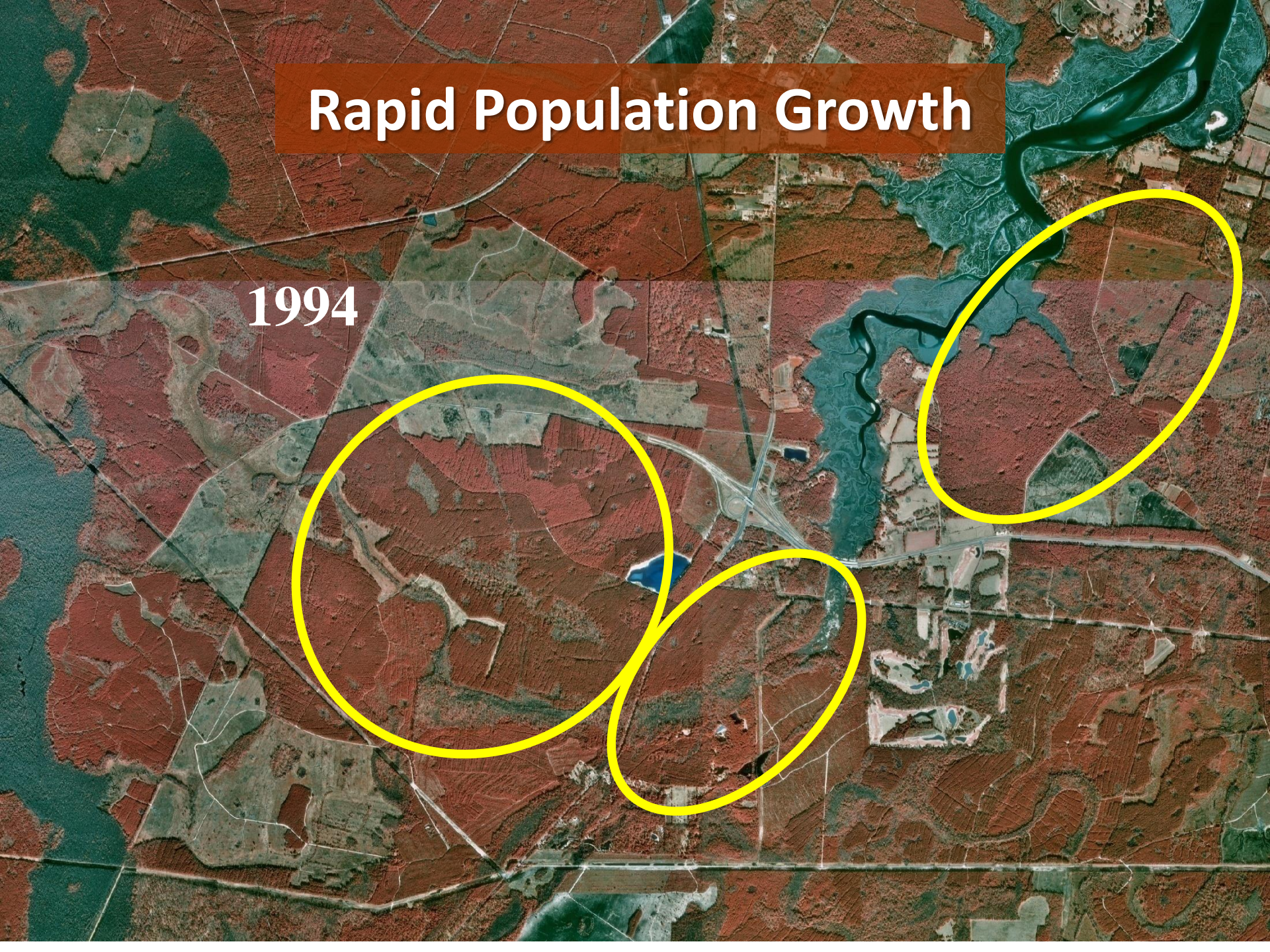
Surrounded by water

- Over half of the county geographical area is water
 - 923 square miles, with approx. 471 square miles being open water or tidal marsh.

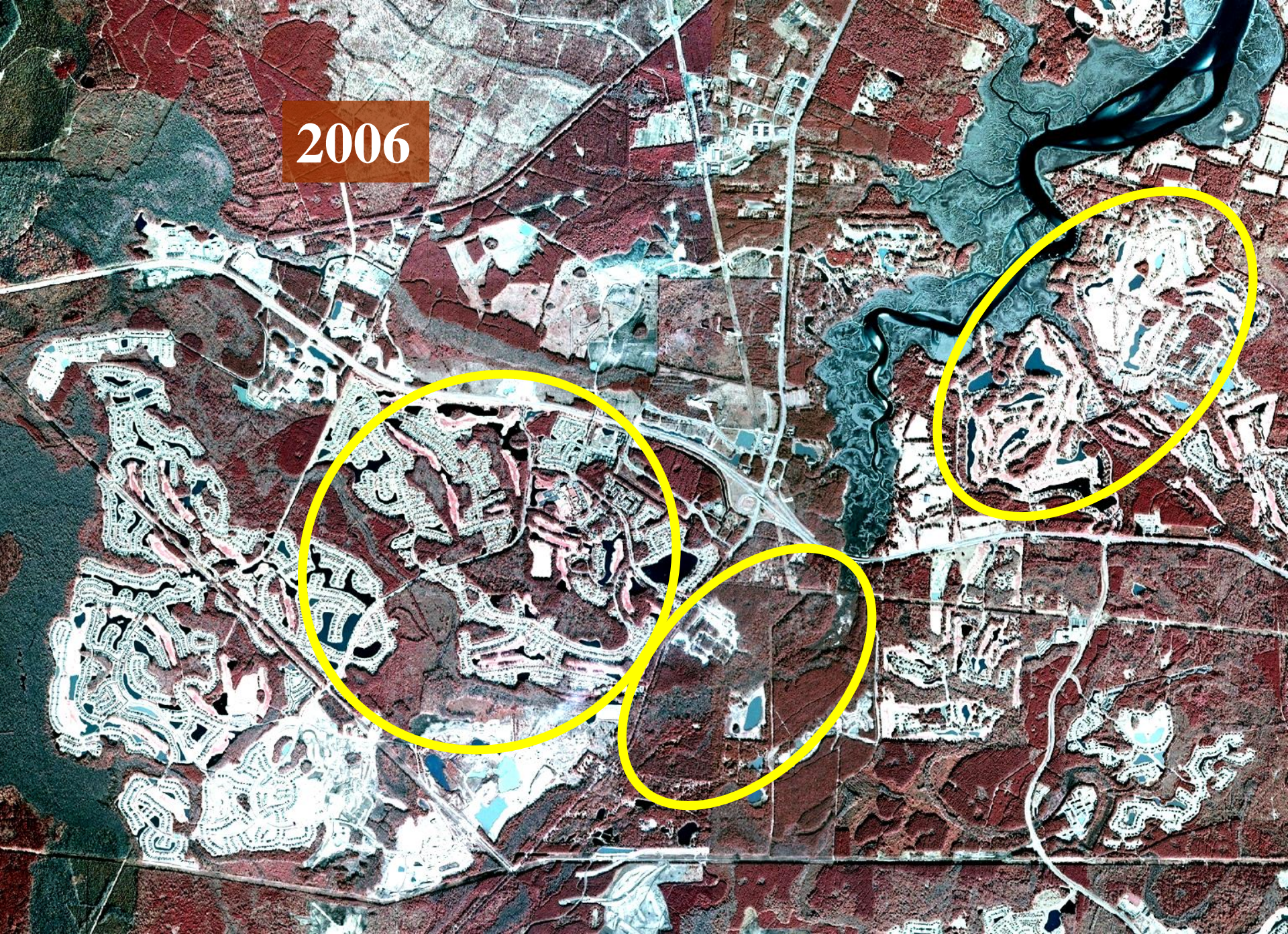


Rapid Population Growth

1994



2006



Unique land use considerations

- Beaufort County is diverse
 - Native populations
 - Service populations
 - Working class
 - Retirement communities
 - Ocean front, resort properties
- One size doesn't fit all when it comes to the typical SFU (or ERU)
- SC Ag use exemption policies

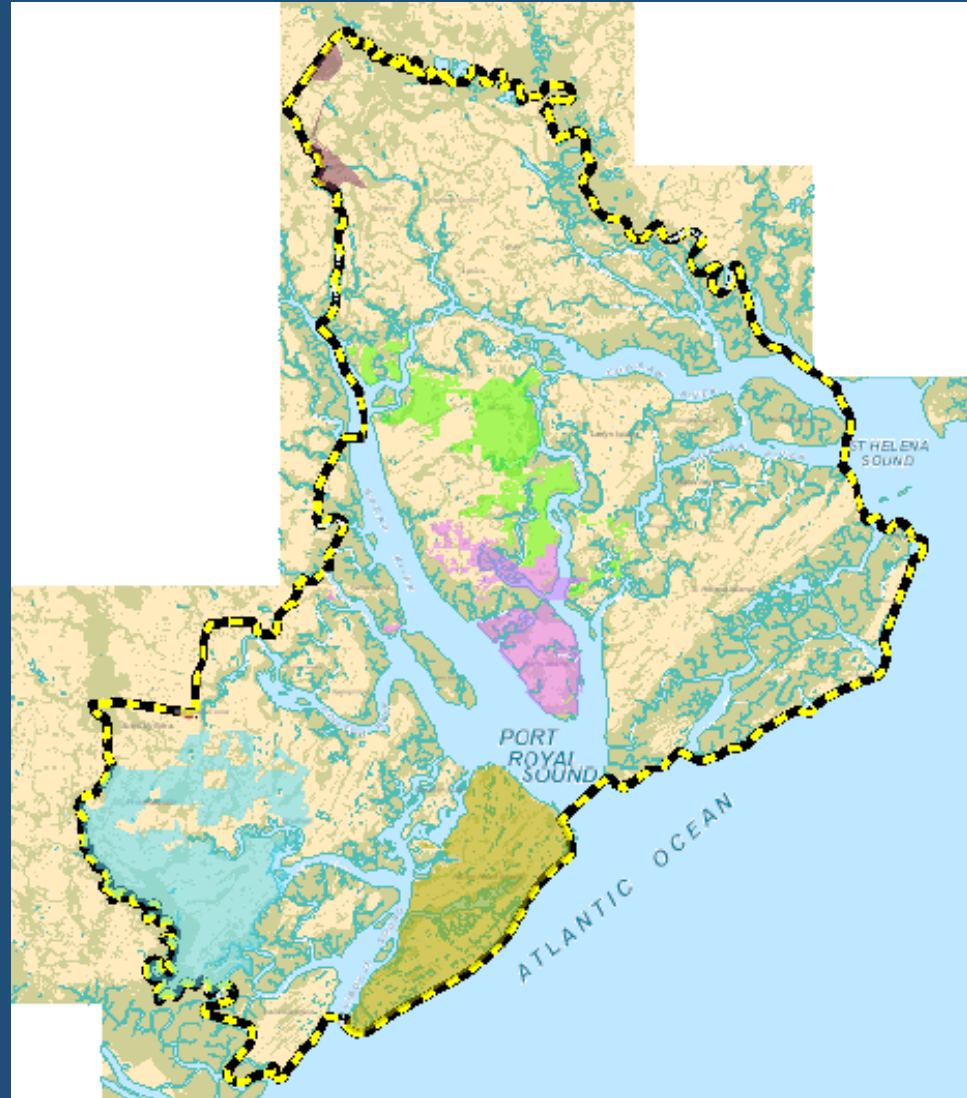
MS4 = the “UNFUNDED” mandate

‘nuff said!



Intertwined jurisdictions

- Town of Hilton Head Island
 - Town of Bluffton
 - Town of Port Royal
 - City of Beaufort
- also
- Town of Yemmassee
 - City of Hardeeville



Annexation nightmares



- South Carolina law is unique
- Annexation of land can occur without the assumption of infrastructure serving the area
- Creates a un-sustainable model were SWU revenues shift from the County to the Towns and Cities while the cost of O&M remains with the County
- Problem will continue to grow
 - Currently 47 of our 281 miles of road are in municipal boundaries
- County needed a way to re-coup that lost revenue from the users of the facilities

Town of Bluffton Annexation Plan

ATTACHMENT 2.M

Town of Bluffton
Beaufort County, SC

Growth Management
Department



**Future
Annexation
Area**
Map 8.1

Legend

JURISDICTIONAL

-  Hilton Head Island
-  Hardeeville
-  Beaufort County
-  Jasper County
-  Town of Bluffton
-  Town of Bluffton Future Limits

TRANSPORTATION

-  Paved Roads
-  Proposed Roads

HYDROLOGY

-  Marsh
-  Water

Effective
2014-11-13

Prepared By
GIS Office



This map was created by the GIS Office of the Town of Bluffton's Information Technology Services using data supplied by the various jurisdictions shown on this map. The GIS Office and data distributed by the GIS Office of the Town of Bluffton's Information Technology Services are not intended as a source of public information or any other source of information. The Town of Bluffton makes no warranty, expressed or implied, as to the accuracy, completeness, timeliness, or reliability, or suitability for any particular purpose of information or data contained in or generated from the Town's Geographic Information System database.

Hardeeville

Sun City
HILTON

Palmetto
Bluff

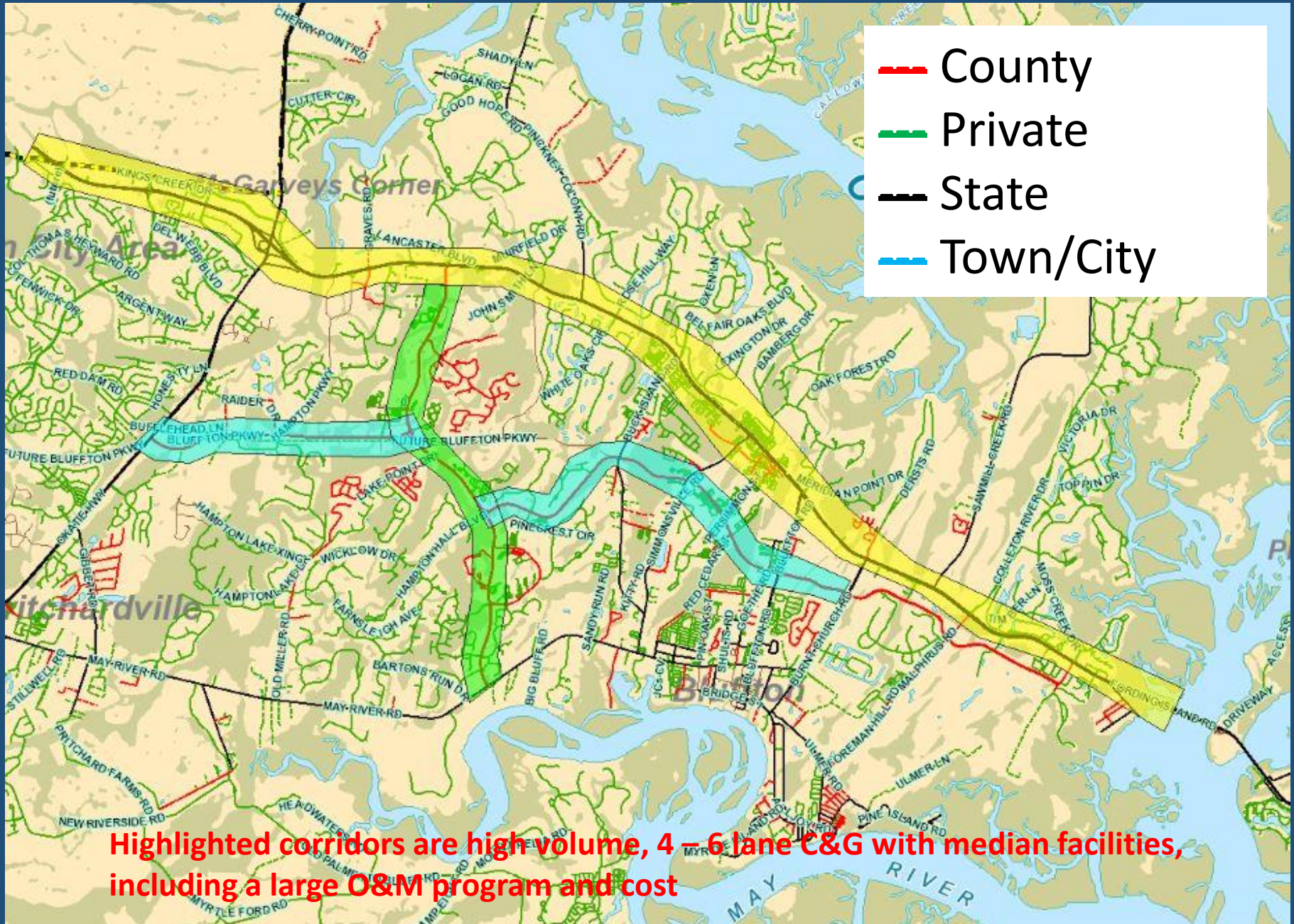
Daufuskie
Island

Hilton Head
Island



Town of Bluffton
Jurisdictional Limits
Key Map

Countywide Infrastructure - Bluffton



Night sweats over State DOT roads

- Adding to the problems with annexation, SC road system is unique as well
- The SC-DOT own and operate an overwhelming majority of the roads in the County
- 2328 miles of road in the County
 - 1362 miles are Private
 - 538 miles are State
 - 281 miles are County
 - 147 miles municipal, military owned
- Drainage infrastructure serving DOT roads not maintained outside of ROW

Poorly funded Capital Program

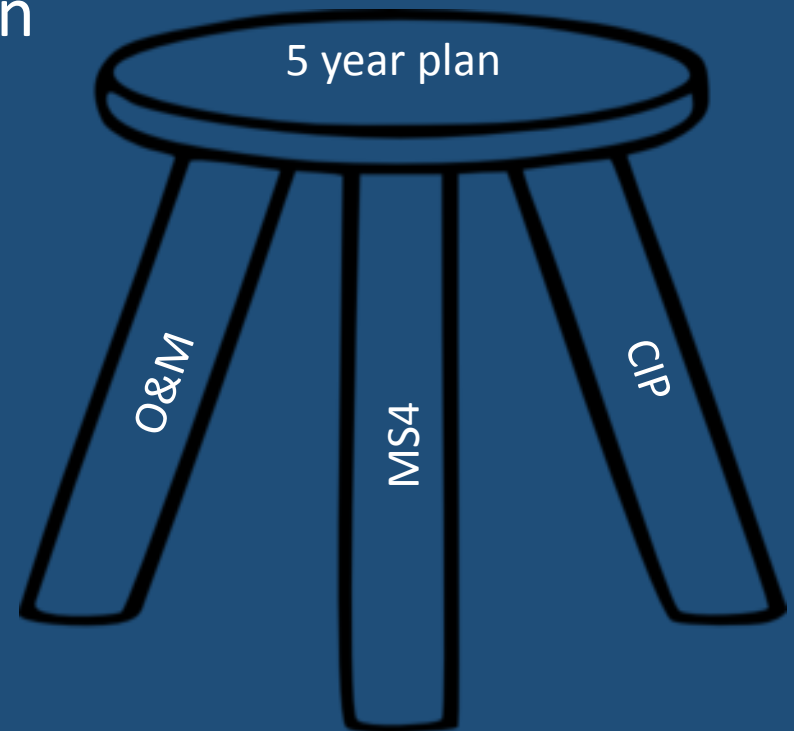
- The 2006 Master Plan identified projects to mainly deal with:
 - Alleviate road flooding
 - Infrastructure rehabilitation
 - Pollutant removal (to a limited degree)
- We currently have 14 projects identified to:
 - Meet 2006 Master Plan goals, and
 - Stormwater runoff volume reduction
 - Fully address pollutant removal
 - Promote growth
- Scheduled over 10 years
- Total cost = \$22 million



Updated 5 year plan and funding needs

In 2015, the Stormwater Utility staff recommended the proposed five year plan, which contains proactive initiatives to improve our program and comply with federally mandated permit programs

- Update the 10 yr. Master Plan
- Fund capital projects
- Update the LOS and EOS
- Expand crew and resources
- Implement a MS4 program



Fail to Plan, Plan to Fail



- We had an obvious need to look into the future
- We had Applied Technology and Management (ATM) on ID/IQ contract for MS4 needs, master planning, and civil engineering on CIP projects
- ATM had Raftelis on board to support the funding analysis
- Our Utility had five rates for five jurisdictions, all having differing needs but all needing more \$\$\$!
- Cost sharing MOAs allowed the Towns and City to join the County in a contract with the ATM / Raftelis team to conduct a rate study

Item 2 of 4

- Beaufort County's stormwater program and the growing predicament
- **Solution strategies and options**
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The Situation for the County

- Steeply rising costs
- Shrinking rate base
- Customers within the Towns/City are not helping fund county-wide drainage operations
- Capital needs becoming more urgent
- Desirable place with growth in our future and a strong dependence on environmental quality

The Situation More Broadly

- Issues for City and Towns:
 - Failing infrastructure and lack of data about the infrastructure (Beaufort)
 - MS4 compliance costs increasing (Bluffton, HHI)
 - O&M needs expanding for older infrastructure that the Town has agreed to maintain (HHI)
 - Increasing O&M needs and shrinking fund balance (PR)

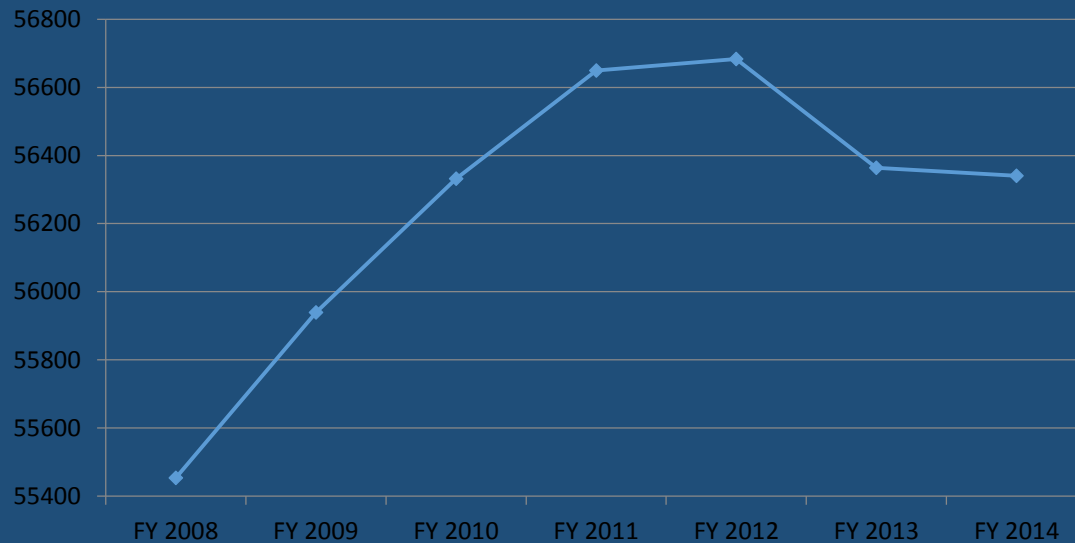


Existing Rates Pre-change

- County: \$ 50
- Town of Bluffton: \$ 98
- Town of HHI: \$ 108.70
- City of Beaufort: \$ 105
- Town of Port Royal: \$ 50

Trends

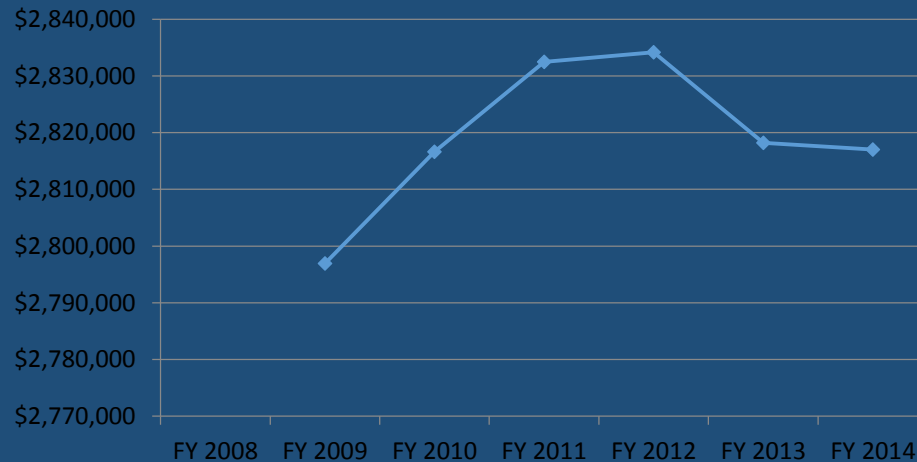
Un-Incorp. BC SFU



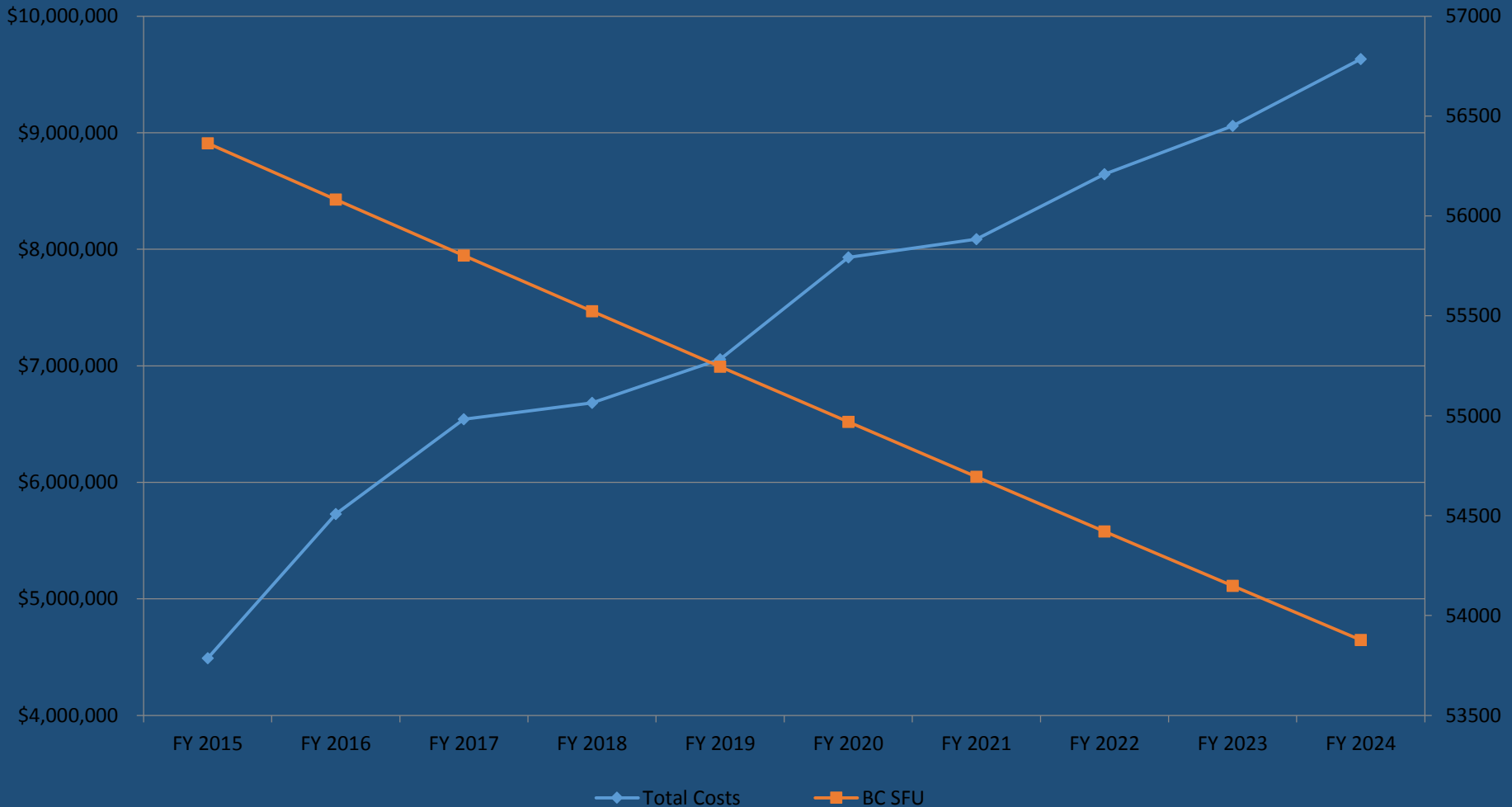
- Main contributors to SFU decline
 - Annexation
 - ToB, CoB, ToPR
 - Hardeeville
 - Yemassee

- Direct link to decline in revenue

County SWU Fees Collected



Projections



- Expenses will continue to rise while SFU will continue to decline

Financial Plan

Stormwater Utility Funding Needs



Financial Planning

Stormwater Utility Funding Needs



Five-year Horizon

Without capital – 40% increase

With modest capital – 90% increase



Impervious Area v. Gross Area

- Existing rate structure charged vacant lands based on runoff factors x acreage
 - Community presumed all SWU fees based on SFU based analysis
 - SC law on AG use exemption prevented the County from raising fees on properties even when rate studies justified higher rates
- New options that were considered included a clear and definable Gross Area component of the fee
 - Led to special interest concern that we were attempting to get fees from properties with no impervious areas (therefore no impact to stormwater)

Rate Impacts of Choices

Roughly, Over a 5-year Period

- Zero capital program, no debt 80%
- Basic capital program, no debt 160%
- Basic capital program, \$10M debt 90%

*Rates likely front-loaded

*Rate base is shrinking; rate study required; rate structure & municipality funding & tax choices will affect outcomes.

Recommendations Summary

- Rates will have to increase a lot to support needs
- Debt issuance will help blunt the increase and will not affect County's existing ratios
- All citizens of the whole County should support county-wide drainage operations
- Rate structure tweaks to generate more revenue from lightly developed property should be considered

Overview - Six Rate Structures to Test

	Overall Rate Structure	Debt Financing for Some Capital?	Method for Allocating Admin & Reg Costs	Method for Allocating CWI O&M Costs	Simplified Residential Rates	Alternative Cost Sharing Approach
A	Current (Imp Area)	No	SFUs	Optional	Yes	Optional
B	Current (Imp Area)	Yes	SFUs	Optional	Yes	Optional
C	Impervious & Gross Area	No	Per account	Impervious & Gross Area	Yes	Optional
D	Impervious & Gross Area	No	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional
E	Impervious & Gross Area	Yes	Per account	Impervious & Gross Area	Yes	Optional
F	Impervious & Gross Area	Yes	Impervious & Gross Area	Impervious & Gross Area	Yes	Optional

Item 3 of 4

- Beaufort County's stormwater program and the growing predicament
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Building and Running the Financial Model

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Building and Running the Financial Model

D10 : Revised RS

	A	B	C	D	E	F	G	H	I
3									
4									
5		Rate Structure Choice:							
6			FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020		
7		Beaufort County	Revised RS	Revised RS	Revised RS	Revised RS	Revised RS		
8		City of Beaufort	Current RS	Current RS	Current RS	Current RS	Current RS		
9		Town of Port Royal	Current RS	Revised RS	Revised RS	Revised RS	Revised RS		
10		Town of Bluffton	Current RS	Revised RS	Revised RS	Revised RS	Revised RS		
11		Town of Hilton Head Island	Current RS	Revised RS	Revised RS	Revised RS	Revised RS		
12									
13									
14		Countywide Infrastructure Charge:	IA/GA unit basis			<---This should always be set to IA/GA Units			
15									
16		Administrative / Reg. Compl. Charge:	per account basis						
17									
18		Revised Rate Structure IA Proportion:				0.80			
19		Revised Rate Structure GA Proportion:				0.20			
20									
21									
22									

Index Key Model Inputs Rate Base Source Data Drainage Breakdown 20150702 BC Budget BC Capital BC Debt Schedule BC Summary

Building and Running the Financial Model

J33												
A	B	C	D	E	F	G	H	I	J	K	L	M
1												
2												
3												
4	Jurisdiction	Billable Accounts									Gross Area Units	
5					BILLED_SFUs	NEW_METHOD_SFUs	PARCEL_BLOC KS_O-2_AC	PARCEL_ACRES_I N_2-10_RANGE	PARCEL_ACRES_I N_10-	PARCEL_ACRE S_IN_GT_100_	SUM_X	
6	Beaufort County		62643		50,763	50,763	52,643	17,313	13,530	22,022	73,318	
7	City of Beaufort		6,313		13,077	14,473	5,960	1,102	2,063	7,961	9,725	
8	Town of Port Royal		3,644		6,543	7,635	3,340	816	965	7,379	6,348	
9	Town of Bluffton		10,897		13,236	16,426	10,454	3,408	6,894	18,187	20,372	
10	Town of Hilton Head Island		37,692		33,172	36,822	20,114	3,753	4,405	3,465	24,792	
11												
12						Gross Area Decline Slop	100%	50%	40%	30%		
13												
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Key Model Inputs

Rate Base Source Data

Drainage Breakdown 20150702

BC Budget

BC Capital

BC Debt Schedule

BC Sum

Building and Running the Financial Model

N36							
	A	B	C	D	E	I	J
16	County Maintained Drainage (ROW)	Pipe (LF)	Open Ditch (LF)				
17							
18	Full County	195,054	1,667,586				
19	Unincorporated County	158,847	1,384,125				
20	City of Beaufort	4,852	19,280				
21	Town of Port Royal	1,217	9,142				
22	Town of Bluffton	7,795	135,436				
23	Town of Hilton Head Island	22,343	119,603				
24							
25							
26	County Maintained Drainage (Not in ROW)	Pipe (LF)	Open Ditch (LF)				
27							
28	Full County	75,515	1,178,893				
29	Unincorporated County	60,193	1,001,424				
30	City of Beaufort	2,164	41,131				
31	Town of Port Royal	1,103	14,111				
32	Town of Bluffton	4,086	90,193				
33	Town of Hilton Head Island	7,969	32,034				
34							
35							
36	Total County Infrastructure by Jurisdiction resp	Pipe (LF)	Open Ditch (LF)	total (LF)			
37							
38	Full County	270,569	2,846,479	3,117,048			
39	Unincorporated County	219,040	2,385,549	2,604,589	83.6%		
40	City of Beaufort	7,016	60,411	67,427	2.2%		
41	Town of Port Royal	2,320	23,253	25,573	0.8%		
42	Town of Bluffton	11,881	225,629	237,510	7.6%		
43	Town of Hilton Head Island	30,312	151,637	181,949	5.8%		
44							
45							
46							
47							

Building and Running the Financial Model

! SECURITY WARNING Automatic update of links has been disabled

B34 : X ✓ fx

	A	B	C	D	E	I
27						
28	Full County	75,515	1,178,893			
29	Unincorporated County	60,193	1,001,424			
30	City of Beaufort	2,164	41,131			
31	Town of Port Royal	1,103	14,111			
32	Town of Bluffton	4,086	90,193			
33	Town of Hilton Head Island	7,969	32,034			
34						
35						
36	Total County Infrastructure by Jurisdiction Responsibility	Pipe (LF)	Open Ditch (LF)	total (LF)		
37						
38	Full County	270,569	2,846,479	3,117,048		
39	Unincorporated County	219,040	2,385,549	2,604,589	83.6%	
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44						
45						

Building and Running the Financial Model

Beaufort County
Stormwater Debt Service

Proposed Debt

	Amount	Cap. Interest Years	FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020	FY 2020-2021
Series 2016 Bonds	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Series 2017 Bonds	\$ 5,000,000		\$ -	\$ 146,185	\$ 292,371	\$ 292,371	\$ 292,371	\$ -
Series 2018 Bonds	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Series 2019 Bonds	\$ 5,000,000		\$ -	\$ -	\$ -	\$ 146,185	\$ 292,371	\$ -
Series 2020 Bonds	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Series 2021 Bonds	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Series 2022 Bonds	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Series 2023 Bonds	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2016 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2017 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2018 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2019 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2020 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2021 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2022 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2023 SRF Loan	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Proposed Debt Service			\$ -	\$ 146,185	\$ 292,371	\$ 438,556	\$ 584,741	\$ -

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Key Model Inputs

Rate Base Source Data

Drainage Breakdown 20150702

BC Budget

BC Capital

BC Debt Schedule

BC SU

Building and Running the Financial Model

Beaufort County Summary Sheet										
Debt Service										
Annual Debt Service	\$	-	\$	146,185	\$	292,371	\$	438,556	\$	584,741
Coverage Goal		1.30		1.30		1.30		1.30		1.30
Actual Coverage				5.93		3.35		1.94		1.33
Revised RS Stormwater Fee										
Fixed Cost per Account, Calc	\$	12.15	\$	13.58	\$	12.77	\$	13.30	\$	13.70
Fixed Cost per Account, admin portion:	\$	2.83	\$	3.47	\$	3.54	\$	3.60	\$	3.69
Fixed Cost per Account, regulatory compliance portion:	\$	9.31	\$	10.11	\$	9.23	\$	9.69	\$	10.01
Fixed Cost per Account, CWI portion:	\$	-	\$	-	\$	-	\$	-	\$	-
Fixed Cost Collection Rate		91%		92%		94%		94%		94%
Fixed Cost per Account, Override	\$	12.00	\$	12.00	\$	12.00	\$	12.00	\$	12.00
Variable Costs, IA Proportion		80%		80%		80%		80%		80%
Variable Costs, GA Proportion		20%		20%		20%		20%		20%
Variable Costs, IA Unit Fee Calc	\$	69.30	\$	80.35	\$	76.73	\$	79.44	\$	108.50
Variable Costs, IA Unit Fee, administrative portion:	\$	-	\$	-	\$	-	\$	-	\$	-
Variable Costs, IA Unit Fee, reg compliance portion:	\$	-	\$	-	\$	-	\$	-	\$	-
Variable Costs, IA Unit Fee, CWI portion:	\$	43.50	\$	45.10	\$	45.61	\$	47.06	\$	47.73
Variable Costs, IA Unit Fee, Other County costs portion:	\$	25.79	\$	35.25	\$	31.12	\$	32.37	\$	60.76
IA Collection Rate		91%		92%		94%		94%		94%

New RS Parcel Data

R112 031 000 0628 0000



PIN	R112 031 000 0628 0000	ClassCode	ComImp ApartmentRental	Bill Class	APARTMENTS
Imp Area	274,317	IA Override		IA Source	GIS
GA Acres	18.51	GA Override		GA Source	GIS

Res Apts		Res Tier 1	
Res MH		Res Tier 2	
Res Condo		Res Tier 3	
Res TH			

Agriculture

Vacant

Exempt

Calc New RS Ag Fee

SW Fee \$2,046.67

CWI Fee \$202.92

Credits

View Credit Add Credit

Notes 2015 charged for billed impervious area from 2014, moved to override impervious area..Seth - remove measurement..Several air conditon units on concrete pads



IMPERVIOUS AREA REVIEW

- ATM/RFC Review of County GIS Database. Made improvements to Non-Residential Impervious area calculations using newer aerial photos
- GIS Data and Updated Mapping Used to Recalculate Approximately 5,900 Non-Residential Parcels County-wide
- The Impervious Area on Nearly 5,000 Non-Residential Parcels was Adjusted

Item 4 of 4

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KEY OUTCOMES

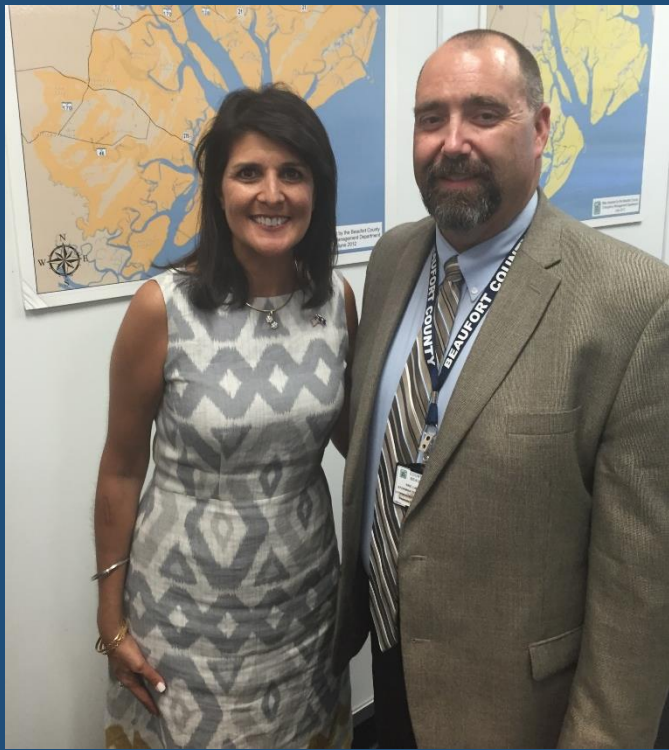
- Impervious area updated
- Rates adopted and revenues increased to target
- Some municipalities adopted new rate structure
- Data maintenance processes changed a lot
 - Ultimately developed some new tools
- Some complaints about gross area charges and other nuances
 - Updated credit policies, which was intended all along

Lessons Learned

- Special interest groups can derail a fast moving train
- 5 jurisdictions = 6 opinions
- Base data is extremely important
- Assessor's office doesn't see value in graphical data
- Land Use class codes can vary and might not align with "engineer's mindset"
- Public Education – Explaining the need, the difference between "private" and "public" infrastructure

Back to the Future!

- Learn a new process to build and maintain complex data sets, eliminating laborious and cumbersome review of data and manual changes to data sets
- Create efficiency in data management to control administrative costs
- Automate credits for obvious land use classes
- Expand opportunities and incentives for the customer to save money and assist the County with MS4 implementation



Thank you.
Questions?

“Friends in
Low Places”



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