TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, FL 34228
(941) 316-1999
FAX (941) 316-1656
www.longboatkey.org

June 29, 2017

Borja Crane-Amores
Administrator, NPDES Stormwater Program
Florida Department of Environmental Protection
Mail Station 2500
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Annual Report for the Town of Longboat Key
Municipal Separate Storm Sewer System (MS4)
NPDES Permit No. FLS000004, Year 3 (Cycle 4)

Dear Mr. Crane-Amores,

Please find enclosed the Town of Longboat Key's MS4 Annual Report for year three of the permit period commencing January 1, 2016 and continuing through December 31, 2016. Note that all co-permittees with Sarasota County, including the Town of Longboat Key, the City of Sarasota, the City of Venice, the City of Northport, and the Florida Department of Transportation District One, will be submitting separate Annual Reports.

The Town of Longboat Key entered into an Interlocal Agreement with Sarasota County on November 8th, 2008, to conduct water quality monitoring, of which the summary of data collected and monitoring results discussion are included as Attachment A of the Annual Report.

If you have any questions please contact me at (941) 316-1988, or jlinkogle@longboatkey.org.

My best regards,

James K. Linkogle

James K. Linkogle, CFM
Public Works Project Manager

CC: Dave Bullock, Town Manager
Juan Florensa, Public Works Director
Rene Janneman, Sarasota County, Env. Sec. II

ANNUAL REPORT FORM FOR INDIVIDUAL NPDES PERMITS FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (RULE 62-624.600(2), F.A.C.)

- This Annual Report Form must be completed and submitted to the Department to satisfy the annual reporting requirements established in Rule 62-621.600, F.A.C.
- Submit this fully completed and signed form and any REQUIRED attachments by email to the NPDES Stormwater Program Administrator or to the MS4 coordinator. Their names and email addresses are available at: http://www.dep.state.fl.us/water/stormwater/npdes/contacts.htm. If files are larger than 10mb, materials may be placed on the NPDES Stormwater ftp site at: ftp://ftp.dep.state.fl.us/pub/NPDES_Stormwater/. After uploading the ANNUAL REPORT files, an email must be sent to the MS4 coordinator or the NPDES program administrator notifying them the report is ready for downloading
- Refer to the Form Instructions for guidance on completing each section.
- **Please print or type information in the appropriate areas below**

SECTION I. BACKGROUND INFORMATION			
A.	Permittee Name: Town of Longboat Key		
B.	Permit Name: Sarasota County Municipal Separate Storm Sewer System		
C.	Permit Number: FLS000004-004 (Cycle 4)		
D.	Annual Report Year: ☐ Year 1 ☐ Year 2 ☒ Year 3 ☐ Year 4 ☐ Year 5 ☐ Other, specify Year:		
E.	Reporting Time Period (month/year): Jan/ 1/2016 through Dec /31/ 2016		
F.	Name of the Responsible Authority: Dave Bullock		
	Title: Town Manager		
	Mailing Address: 501 Bay Isles Road		
	City: Longboat Key	Zip Code: 34228	County: Sarasota/Manatee
	Telephone Number: 941-316-1999	Fax Number: 941-316-1656	
	E-mail Address: dbullock@longboatkey.org		
G.	Name of the Designated Stormwater Management Program Contact (if different from Section I.F above): Juan Florensa		
	Title: Public Works Director		
	Department: Public Works		
	Mailing Address: 600 General Harris Street		
	City: Longboat Key	Zip Code: 34228	County: Sarasota/Manatee
	Telephone Number: 941-316-1988	Fax Number: 941-316-1984	
	E-mail Address: jflorensa@longboatkey.org		

SECTION II. MS4 MAJOR OUTFALL INVENTORY (Not Applicable In Year 1)	
A.	Number of outfalls ADDED to the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☒ Yes ☐ No ☐ Not Applicable)
B.	Number of outfalls REMOVED from the outfall inventory in the current reporting year (insert "0" if none):0 (Does this number include non-major outfalls? ☒ Yes ☐ No ☐ Not Applicable)
C.	Is the change in the total number of outfalls due to lands annexed or vacated? ☐ Yes ☐ No ☒ Not Applicable

SECTION III. MONITORING PROGRAM	
A.	Provide a brief statement as to the status of monitoring plan implementation: The monitoring plan is carried out through an inter-local agreement with Sarasota County. Please see the Sarasota County Annual Report for the monitoring information.
B.	Provide a brief discussion of the monitoring results to date: *The Bay Conditions Report is included with the Sarasota County Report and on the Sarasota Water Atlas website for Sarasota Bay adjacent waters to Longboat Key. (http://www.sarasota.wateratlas.usf.edu/coastal/conditions-overview.aspx)* 1. All 6 bays were in the Caution category of the Bay Conditions Index. The Index is based on chlorophyll, nitrogen and phosphorus. 2. Nine of 17 creeks passed the Creek Condition Index and 8 were in the Caution category. The index is based on chlorophyll, nitrogen, phosphorus and dissolved oxygen 3. Oysters: fourteen stations ranked excellent with greater than 75% live oysters. Eight stations fell into the "good" category (50%-75% live oysters). Two stations were in the caution category with less than 50% live. 4. Seagrass: Three of 6 bays had increased acreage of seagrass and three had declines. As compared to 2015, there were increases in seagrass abundance, blade length, and percent Halodule. There were decreases in drift algae, and percent Thalassia. 5. Scallop monitoring sites throughout the county had significantly less spat landings in 2016. The county experienced concentrated rainfall events and persistent redtide blooms, each of these conditions have shown to have a negative affect scallop populations. 6. Pollutant Load Modeling was completed for 2001, 2006, 2010 and 2016. It showed increases from pollutant sources like land development, septic systems, and wastewater, plus decreases from stormwater projects and wastewater and septic improvements. 7. Rain for the year was 5 inches above average primarily because of two wet months – January and August. Unusually dry months were September, November and December. Summary: The overall health in Sarasota Bay degraded slightly in 2016, changing from the previous year. Chlorophyll *a* showed a clear increase, while phosphorus and nitrogen slightly decreased. *Water Quality:* Two of the three water quality indicators (nitrogen and phosphorus) were rated as excellent (below their respective targets). However, chlorophyll *a* exceeded the target and threshold values. The mean for chlorophyll *a* was calculated as an arithmetic mean and the means for nitrogen and phosphorus were calculated as geometric means (per the Numeric Nutrient Criteria outlined in the Florida Administrative Code, section 62-302.532). Mean chlorophyll *a* concentration was 0.0067 mg/l, above the target value of 0.0052 mg/l and the threshold of 0.0061 mg/l. The mean concentration of total nitrogen decreased marginally 6 to 0.3528 mg/l, still below its target value of 0.51 mg/l . Mean total phosphorus concentration increased marginally, but at 0.0639 mg/l was still well below its target value of 0.150 mg/l. *Biotic Indicator:* A survey of the biotic indicator, seagrass, was performed in 2016 by the Southwest Florida Water Management District. In 2016, the total area of seagrass in the lower portion of Sarasota Bay (the area within Sarasota County) was estimated to be 3,639 acres, well above the target of 2,022 acres. *DEP Note: See Part V of the permit for the monitoring requirements. Each permittee must discuss the monitoring results as it relates to the implementation and effectiveness of their SWMP.*

C.	Attach a monitoring data summary, as required by the permit. Please find Monitoring Program discussion as **Attachment "A"** of this Annual Report. <u>Part A.</u> *1. Ambient Water Quality of Bays.* *http://www.sarasota.wateratlas.usf.edu/bay-conditions/* *http://www.sarasota.wateratlas.usf.edu/water-quality-trends/* *2. Ambient Water Quality of Watersheds* *http://www.sarasota.wateratlas.usf.edu/creek-conditions/* *http://www.sarasota.wateratlas.usf.edu/water-quality-trends/* *3. Biological Monitoring – Oysters* *http://www.sarasota.wateratlas.usf.edu/oysters/* *4. Biological Monitoring – Seagrass* *http://www.sarasota.wateratlas.usf.edu/seagrass/#sarasota-seagrass* *5. Biological Monitoring – Scallops* *http://www.sarasota.wateratlas.usf.edu/upload/documents/2016-Scallop-Update-051117.pdf* *6. Pollutant Load Modeling* *http://www.sarasota.wateratlas.usf.edu/upload/documents/PLM-Full-Report-NPDES-03May2017-corrected.pdf* *7. Rainfall* *http://www.sarasota.wateratlas.usf.edu/rainfall/* *http://www.sarasota.wateratlas.usf.edu/datamapper/*

SECTION IV. FISCAL ANALYSIS	
A.	Total expenditures for the NPDES stormwater management program for the current reporting year: $422,692 *<u>DEP Note:</u> If program resources have decreased from the previous year, attach a discussion of the impacts on the implementation of the SWMP as per Part II.F of the permit.*
B.	Total budget for the NPDES stormwater management program for the subsequent reporting year: $400,000

SECTION V. MATERIALS TO BE SUBMITTED WITH THIS ANNUAL REPORT FORM

Only the following materials are to be submitted to the Department along with this fully completed and signed Annual Report Form (check the appropriate box to indicate whether the item is attached or is not applicable):

Attached	N/A	***<u>DEP Note:</u> Please complete Checklists A & B at the end of the tailored form.***
☒	☐	Any additional information required to be submitted in this current annual reporting year in accordance with Part III.A of your permit that is not otherwise included in Section VII below.
☒	☐	A monitoring data summary as directed in Section III.C above and in accordance with Rule 62-624.600(2)(c), F.A.C.
☐	☐	Year 1 ONLY: An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM) in accordance with Rule 62-624.600(2)(a), F.A.C.
☐	☒	Year 3 ONLY: The estimates of pollutant loadings and event mean concentrations for each major outfall or each major watershed in accordance with Rule 62-624.600(2)(b), F.A.C.
☐	☐	Year 4 ONLY: Permit re-application information in accordance with Rule 62-624.420(2), F.A.C.

DO NOT SUBMIT ANY OTHER MATERIALS

(such as records and logs of activities, monitoring raw data, public outreach materials, etc.)

SECTION VI. CERTIFICATION STATEMENT AND SIGNATURE

The Responsible Authority listed in Section I.F above must sign the following certification statement, as per Rule 62-620.305, F.A.C: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Authority (type or print): Dave Bullock

Title: Town Manager

Signature: Dave Bullock Date: 6 / 29 / 17

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Part III.A.1	**Structural Controls and Stormwater Collection Systems Operation**				

Maintain an up-to-date inventory of the structural controls and roadway stormwater collection structures operated by the permittee, including, at a minimum, all of the types of control structures listed in Table II.A.1.a of the permit. Report the current known inventory.

DEP Note: The permittee needs to "customize" this section by adding any structural controls to the list below that are part of the permittee's MS4 currently or are planned for the future. The permittee may remove any structural controls listed that it does not have currently or will likely not have during this permit cycle. Please see the attached description of each type of structure. In addition, the permittee may choose its own unit of measurement for each structural control to be consistent with the unit of measurement in the documentation. Unit options include: miles, linear feet, acres, etc.

Provide an inventory of all known major outfalls covered by the permit and a map depicting the location of the major outfalls (hard copy or CD-ROM). Provide the outfall inventory and map with the Year 1 Annual Report.

Report the number of inspection and maintenance activities conducted for each type of structure included in Table II.A.1.a, and the percentage of the total inventory of each type of structure inspected and maintained. If the minimum inspection frequencies set forth in Table II.A.1.a were not met, provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met.

DEP Note: If the minimum inspection frequencies set forth in Table II.A.1.a of the permit were not met for one or more type of structure, the permittee must provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met. Please provide the title of the attached explanation in Column D and the name of the entity who finalized the explanation in Column E.

Maintain documentation of the wet detention systems in the Adopt-A-Pond program. Report the number of systems in the Adopt-A-Pond program.

Type of Structure	Number of Activities Performed					Documentation / Record	Entity Performing the Activity	Comments
	Total Number of Structures	Number of Inspections	Percentage Inspected	Number of Maintenance Activities	Percentage Maintained			
Dry retention systems	10	12	100%	32	100%	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	As Built Const. Plans for all Town Facilities Each Mowed per maintenance schedule
Exfiltration trench / French drains (linear feet)	216	1	100%	1	100%	Public Works Streets Dept Mark	Public Works Streets Dept	As Built Const. Plans for Police Dept. and Public

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE									
A.	**B.**				**C.**		**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**				**Number of Activities Performed**		**Documentation / Record**	**Entity Performing the Activity**	**Comments**
							Richardson, Mark Kerr		Works Facilities annual inspections
	Wet detention systems	4	12	100%	12	100%	Public Works Streets Dept Mark Richardson, Mark Kerr	Serviced monthly by contractor.	As Built Const. Plans for Fire Dept. and Parks Dept. Facilities
	Major stormwater outfalls	3	4	100%	1	100%	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	36 inch outfalls with Tide-Flex Valves in the North end Longboat Village Qrtly. Inspections
	MS4 pipes / culverts (miles)	3.62	7	16%	7	6%	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	
	Inlets / catch basins / grates	247	524	100%	74	30%	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	Drainage Hot Spot areas are inspected and maintained more frequently.
	Ditches / conveyance swales (Lineal Feet)	1700	32	100%	32	100%	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	Inspected / Maintained during scheduled mowing.
	Systems in the Adopt-A-Pond program	0					0	0	Town does not have an Adopt–a-pond program.
	ATTACH explanation if any of the minimum inspection frequencies in Table II.A.1.a were <u>not</u> met								
	Year 1 ONLY: Attach a map of all known major outfalls						Included in Year 1 Report		Included in Year 1 Report
Part III.A.2	**Areas of New Development and Significant Redevelopment**								
	Report the number of significant redevelopment projects reviewed by the permittee for post-development stormwater considerations. Report the number of new development projects reviewed under Part III.A.9.a *<u>DEP Note:</u> Please provide an explanation in Column F for any "0" reported in Column C.*								

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
	Number of significant redevelopment projects reviewed	2	Building Permit Files	Planning Zoning Building Dept.	The Zota Resort, and Bayfront Park Renovations.
	Provide in the Year 2 Annual Report the summary report of the review of local codes activity. Provide in the Year 4 Annual Report the follow-up report on plan implementation of modifying codes to allow low impact design BMPs. *DEP Note: Refer to Part III.A.2 of the permit for details regarding what the review entails, and what must be included in the summary report and follow-up report. Please provide the title of the attached report in Column D and the name of the entity who finalized the report in Column E.*				
	Year 2 ONLY: Attach the summary report of the review activity		Planning Zoning and Building Dept. records	Alaina Ray, PZB Director	**Included in Yr, 2 Report**
	Year 4 ONLY: Attach the follow-up report on plan implementation				
Part III.A.3	**Roadways**				
	Annually review (and revise, as needed) and implement the permittee's written procedures for the litter control program(s) for public streets, roads, and highways, including rights-of-way, employed within the permittee's jurisdictional area and properly dispose of collected material. Implement the program on a monthly, or on an as needed, basis. Report on the litter control program, including the frequency of litter collection, an estimate of the total number of road miles cleaned or amount of area covered by the activities, and an estimate of the quantity of litter collected. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. In addition, the permittee may choose its own units of measurement for the reporting items. Unit options for the amount of litter include: bags, cubic yards, pounds, tons. Unit options for the amount of area covered by the activity include: square feet, linear feet, yards, miles, acres. If all litter collection is performed by staff or by contractors, but not by both, please remove the non-applicable reporting items.*				
	PERMITTEE Litter Control Program: Frequency of litter collection	Twice weekly within Gulf of Mexico Drive (SR789) right of way	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	Includes Beach Accesses
	PERMITTEE Litter Control Program: Estimated amount of area maintained (acres)	132.12	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	Gulf of Mexico Drive Road Right of Way
	PERMITTEE Litter Control Program: Estimated amount of litter collected (cubic yards)	60 +/-	Public Works Streets Dept Mark Richardson, Mark Kerr	Public Works Streets Dept	Waste Management Invoices

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
					document 25.91 tons for 2- 30 cu/yd. dumpster pulls for 2016 year.
	If an Adopt-A-Road or similar program is implemented, report the total number of road miles cleaned and an estimate of the quantity of litter collected. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. The permittee may choose its own unit of measurement for the amount of litter collected. Unit options include: bags, cubic yards, pounds, tons. If an Adopt-A-Road or similar program is not implemented by the permittee, please note that in Column F but do not remove the Adopt-A-Road Program reporting items.*				
	Trash Pick-up Events: Total miles cleaned	0			Town does not have an Adopt–a-Road program.
	Trash Pick-up Events: Estimated amount of litter collected (cubic yards)	0			Town does not have an Adopt–a-Road program.
	Adopt-A-Road Program: Total miles cleaned	0			Town does not have an Adopt–a-Road program.
	Adopt-A-Road Program: Estimated amount of litter collected (cubic yards)	0			Town does not have an Adopt–a-Road program.
	Report on the street sweeping program, including the frequency of the sweeping, total miles swept, an estimate of the quantity of sweepings collected, and the total nitrogen (TN) and total phosphorus (TP) loadings that were removed by the collection of sweepings. If no street sweeping program is implemented, provide the explanation of why not in the Year 1 Annual Report. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. Also, the permittee may choose its own unit of measurement for the amount of sweeping material collected. Unit options include: cubic yards, pounds, tons.* *DEP Note: If the permittee has curbs and gutters but no street sweeping program is implemented, the permittee must provide an explanation of why not in the Year 1 Annual Report. Refer to Part III.A.3 of the permit for the information that must be included in the explanation (including the alternate BMPs used or planned in lieu of street sweeping). Please provide the title of the attached explanation in Column D and the name of the entity who finalized the explanation in Column E.*				
	Frequency of street sweeping	Quarterly	Public Works Streets Dept Mark Richardson, Mark Kerr	USA Services Inc.	Per Invoices
	Total miles swept (per year)	219.28	Public Works Streets Dept Mark Richardson, Mark Kerr	USA Services Inc.	54.82 curb miles swept per Qtr.
	Estimated quantity of sweeping material collected (tons)	128.8	Public Works Streets Dept Mark	USA Services Inc.	88 cubic yds. @ 1.4 tons per

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
			Richardson, Mark Kerr		cu/yd. =123.2 tons
	Total nitrogen loadings removed (pounds)	118	PWK:Z drive/ NPDES	James Linkogle, PWKPM	FSA Load Calculator
	Total phosphorus loadings removed (pounds)	152	PWK:Z drive/ NPDES	James Linkogle, PWKPM	FSA Load Calculator
	Year 1 ONLY: If have curbs and gutters, attach explanation of why no street sweeping program and the alternate BMPs used or planned				
	Annually review (and revise, as needed) and implement the permittee's written standard practices to reduce the pollutants in stormwater runoff from areas associated with road repair and maintenance, and from permittee-owned or operated equipment yards and maintenance shops that support road maintenance activities. Report the number of applicable facilities and the number of inspections conducted for each facility. *DEP Note: The permittee needs to "customize" this section by listing the names of the applicable facilities in Column B and the number of inspections of each facility in Column C. Add more rows if necessary. If "0" is reported in Column C for the number of inspections conducted and the permittee has one or more applicable facilities, please provide an explanation in Column F for why no inspections were conducted. In addition, if the same facility is applicable under both Parts III.A.3 and III.A.5 of the permit, the same site inspection can count towards both inspection requirements as long as it covers the applicable waste area(s). Be sure to report the site inspection under both Parts III.A.3 and III.A.5.*				
		Number of Inspections			
	Name of facility #1: Public Works Complex	52	Public Works Department	Public Works staff	Staff report to complex daily, conduct weekly cleanup activities.
	Name of facility #2:				
	Name of facility #3:				
Part III.A.4	**Flood Control Projects**				
	Report the total number of flood control projects that were constructed by the permittee during the reporting period and the number of those projects that did NOT include stormwater treatment. The permittee shall provide a list of the projects where stormwater treatment was not included with an explanation for each of why it was not. Report on any stormwater retrofit planning activities and the associated implementation of retrofitting projects to reduce stormwater pollutant loads from existing drainage systems that do not have treatment BMPs. *DEP Note: A "stormwater retrofit project" is one implemented primarily to provide stormwater treatment for areas currently without treatment.* *DEP Note: The status of the flood control and retrofit projects should be reported as of the last day of the applicable reporting period. Therefore, there should be no duplication for those reported as planned, for those reported as under construction and for those reported as completed.* *DEP Note: If applicable, please provide the title of the attached list of flood control projects that did not include stormwater treatment in Column D and the name of the entity who finalized the list in Column E. Please provide an explanation in Column F for any "0" reported in Column C.*				
	Flood control projects completed during the reporting period	0	None		Town is a Coastal Barrier

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
					Island and lies completely within a Special Flood Hazard Zone on FEMA FIRM
	Flood control projects completed during the reporting period that did <u>not</u> include stormwater treatment	0	None		Town is a Coastal Barrier Island and lies completely within a Special Flood Hazard Zone on FEMA FIRM
	ATTACH a list of the flood control projects that did <u>not</u> include stormwater treatment and an explanation for each of why it was not	0	None		Town is a Coastal Barrier Island and lies completely within a Special Flood Hazard Zone on FEMA FIRM
	Stormwater retrofit projects planned	2	Public Works -or- Purchasing Dept.	Public Works James Linkogle	Village Drainage System Final Assessment completed 2016 Project subject to Budget approval. Bayfront Park renovations
	Stormwater retrofit projects under construction during the reporting period	1	Construction Plans and Permits		Bayfront Park Renovations
	Stormwater retrofit projects completed during the reporting period	0	Construction Plans and Permits		Bayfront Park Renovations
Part III.A.5	**Municipal Waste Treatment, Storage, and Disposal Facilities Not Covered by an NPDES Stormwater Permit**				
	Annually review (and revise, as needed) and implement the permittee's written procedures for inspections and the implementation of measures to control discharges from the following facilities that are not otherwise covered by an NPDES stormwater permit: • Operating municipal landfills; • Municipal waste transfer stations; • Municipal waste fleet maintenance facilities; and • Any other municipal waste treatment, waste storage, and waste disposal facilities. Report the number of applicable facilities and the number of the inspections conducted for each facility.				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
	DEP Note: The permittee needs to "customize" this section by listing the names of the applicable facilities in Column B and the number of inspections of each facility in Column C. Add more rows if necessary. If "0" is reported in Column C for the number of inspections conducted and the permittee has one or more applicable facilities, please provide an explanation in Column F for why no inspections were conducted. ***An applicable facility under Part III.A.5 includes, but is not limited to, those facilities/yards where street sweeping material and/or yard waste are temporary stockpiled, and where solid waste collection vehicles are parked and/or maintained.*** *In addition, if the same facility is applicable under both Parts III.A.3 and III.A.5 of the permit, the same site inspection can count towards both inspection requirements as long as it covers the applicable waste area(s). Be sure to report the site inspection under both Parts III.A.3 and III.A.5.*				
		Number of Inspections			
	Name of facility #1: Public Works Complex	52	Public Works Department	Public Works staff	Staff report to complex daily, weekly clean-up
	Name of facility #2: South Water Plant	52	Public Works Department	Public Works staff	Staff report to complex daily, weekly clean-up
	Name of facility #3:				
	Name of facility #4:				
Part III.A.6	**Pesticides, Herbicides, and Fertilizer Application**				
	Continue to require proper certification and licensing by the Florida Department of Agriculture and Consumer Services (FDACS) for all applicators contracted to apply pesticides, herbicides, or fertilizers on permittee-owned property, as well as any permittee personnel employed in the application of these products. Report the number of permittee personnel applicators and contracted commercial applicators of pesticides and herbicides who are FDACS certified / licensed. Report the number of permittee personnel and contractors who have been trained through the Green Industry BMP Program, and the number of contracted commercial applicators of fertilizer who are FDACS certified / licensed. *DEP Note: If "0" is reported in Column C for any of the reporting items, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training / certification was previously provided / obtained, and the names of the personnel and contractors previously trained / certified.*				
	PERSONNEL: Florida Department of Agriculture and Consumer Services (FDACS) certified applicators of pesticides and herbicides	5	PWK Z:Files	Public Works Streets Dept Mark Richardson, Mark Kerr	
	CONTRACTORS: FDACS certified / licensed applicators of pesticides and herbicides	2	PWK Z:Files	Public Works Streets Dept Mark Richardson	Right of Way Maintenance Contract
	PERSONNEL: FDACS certified / licensed applicators of fertilizer	1	PWK Z:Files	Public Works Streets Dept Mark Richardson, Mark Kerr	

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
	CONTRACTORS: FDACS certified / licensed applicators of fertilizer	2	PWK Z:Files	Public Works Streets Dept Mark Richardson	Right of Way Maintenance Contract
	Pursuant to SB 2080 (2009), all local governments are encouraged to adopt a Florida-friendly Landscaping Ordinance similar to the one set forth in the document "Florida-friendly Guidance Models for Ordinances, Covenants and Restrictions." If the broader Florida-friendly ordinance described above is not adopted, then all local governments within the watershed of a nutrient-impaired water body shall adopt the Department's Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes pursuant to SB 494 (2009) or an ordinance that includes all of the requirements set forth in the Model Ordinance. The ordinance shall be adopted within 24 months of the date of permit issuance. Provide a copy of the adopted ordinance with the subsequent Year 1 or Year 2 Annual Report. *DEP Note: If this provision is not applicable because the permittee is not within the watershed of a nutrient-impaired water body, then please indicate that in Column F, but do not remove this reporting item.* *DEP Note: Please provide the title and citation of the ordinance in Column D, and the name of the entity who finalized the ordinance in Column E.*				
	Year 1 or Year 2 ONLY: Attach copy of adopted Florida-friendly ordinance		Town Code Chapter 102 - FERTILIZER MANAGEMENT	Signed by Hal Lenobel, Mayor	Ord. 08-04, passed 5-5-08 **Submitted with Year One Report**
	During Year 1 of the permit, develop and implement a written public education and outreach program plan to encourage citizens to reduce their use of pesticides, herbicides, and fertilizers. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage citizens to reduce their use of pesticides, herbicides, and fertilizers, including the type and number of activities conducted, the type and number of materials distributed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). Activities performed under the Florida Yards and Neighborhoods (FYN) program should only be reported if the permittee is contributing funding towards the FYN staff and program within its jurisdiction. *DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting item of "Estimated percentage of the population reached by the activities in total" must remain. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items please include in Column F an explanation for why no outreach was performed.* *DEP Note: IF APPLICABLE Sarasota County is to report the public education and outreach activities that it performed county-wide (and not just in the unincorporated areas of Sarasota County). The co-permittees are to report just the public education and outreach activities that they performed.* *DEP Note: Indicate under Column E "Entity Performing the Activity" if FYN or IFAS is performing any of the reported public education and outreach activities. In addition, please complete the following line:* **FYN PROGRAM FUNDING: Permittee Provides Funding? ☐ Yes ☒ No Amount of Funding = $**				
	Estimated percentage of the population reached by the activities in total	Est. 3%	Public Works NPDES /CRS files	James Linkogle, PWKPM	3 Events per year avg. attendance @100+/-, no tracking of

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
					response to effectiveness.
	Brochures/Flyers/Fact sheets distributed	300+/-	Public Works NPDES /CRS files	James Linkogle, PWKPM	Annual Events, Town Hurricane Seminar, Town Open House, Condo Association Managers meeting,
	FYN: Brochure/Flyers/Fact sheets distributed	100 +/-	Public Works NPDES files	FYN	Available at Public Works and Town Hall information desks.
	Newsletters: Number of newsletters distributed	7800	Public Works NPDES /CRS files	James Linkogle, PWKPM, Donna Spencer PW Admin. Mngr.	Annual Summer Newsletter to all residents has flood, and stormwater information.
	Public displays (e.g., kiosks, storyboards, posters, etc.)	2	Public Works NPDES /CRS files	Public Works Donna Spencer, Town Hall Clerk's Office	FYN and Citizen Guide to Landscape and Fertilizer Ordinance brochures.
	Special events: Number conducted	3	Public Works NPDES /CRS files	James Linkogle. PWPM	Annual Events, Town Hurricane Seminar, Town Open House, Condo Association Managers meeting
	Special events: Number of participants	Up to 300	Public Works NPDES /CRS files	James Linkogle. PWPM	Annual Events, Town Hurricane Seminar, Town Open House Condo Association

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
					Managers meeting
	Web Site: Number of hits / visitors to the stormwater-related pages	1	Town Website	IT Dept. does not track hits	Do not record number of hits
Part III.A.7.a	**Illicit Discharges and Improper Disposal — Inspections, Ordinances, and Enforcement Measures**				
	Where applicable, strengthen the legal authority to conduct inspections, conduct monitoring, control illicit discharges, illicit connections, illegal dumping and spills into the MS4 and to require compliance with conditions in ordinances, permits, contracts, and orders. Report amendments, as needed. *DEP Note: If applicable, please provide the title of the attached report in Column D and the name of the entity who finalized the report in Column E.*				
	ATTACH a report on any amendments to the applicable legal authority				
Part III.A.7.c	**Illicit Discharges and Improper Disposal — Investigation of Suspected Illicit Discharges and/or Improper Disposal**				
	During Year 1 of the permit, develop and implement a written proactive inspection program plan for identifying and eliminating sources of illicit discharges, illicit connections, or dumping to the MS4. Report on the proactive inspection program, including the number of inspections conducted, the number of illicit activities found, and the number and type of enforcement actions taken. *DEP Note: If "0" is reported in Column C for the first reporting item, please include an explanation in Column F for why no proactive inspections were performed. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.* *DEP Note: Proactive inspections may include, for example, suspect areas (e.g., industrial areas), commercial businesses (e.g., restaurants, car washes, service stations, laundries / dry cleaners, auto body shops, mobile carpet cleaners) or temporary activities (e.g., special events / fairs / circus) that would not otherwise be inspected during routine inspections and maintenance of the MS4, in association with high risk industrial facilities or construction sites, or in response to citizen or staff reports.* *DEP Note: Refer to Part III.A.7.c of the permit for what must be included in the written proactive inspection program plan. Please provide the title of the attached plan in Column D and the name of the entity who finalized the plan in Column E.*				
	Proactive inspections for suspected illicit discharges / connections / dumping	12	PWK NPDES files, e-mails	Public Works staff	Incidents brought to staff attention while performing normal duties.
	Illicit discharges / connections / dumping found during a proactive inspection	0	Code Enforcement Records	Chris Elbon, Code Enforcement Officer	
	Notices of Violation (NOVs) / warning letters / citations issued for illicit discharges / connections / dumping found during a proactive inspection	0			
	Fines issued for illicit discharges / connections / dumping found during a proactive inspection	0			
	Year 1 ONLY: Attach the written proactive inspection program plan				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A. Permit Citation/ SWMP Element	B. Permit Requirement/Quantifiable SWMP Activity	C. Number of Activities Performed	D. Documentation / Record	E. Entity Performing the Activity	F. Comments
	Annually review (and revise, as needed) and implement the permittee's written procedures to conduct reactive investigations to identify and eliminate the source(s) of illicit discharges, illicit connections or improper disposal to the MS4, based on reports received from permittee personnel, contractors, citizens, or other entities regarding suspected illicit activity. Report on the reactive investigation program as it relates to responding to reports of suspected illicit discharges, including the number of reports received, the number of investigations conducted, the number of illicit activities found, and the number and type of enforcement actions taken. *DEP Note: If the number of reports received differs from the number of reactive investigations, please provide an explanation for the discrepancy in Column F. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.*				
	Reports of suspected illicit connections / discharges / dumping received	9	PWK NPDES files, e-mails	PW staff, CE Officer	Brought into compliance
	Reactive investigations of reports of suspected illicit discharges/ connections / dumping	5	PWK NPDES files, e-mails	PW staff, CE Officer	Brought into compliance
	Illicit discharges / connections / dumping found during a reactive investigation	1	Code Enforcement records	Chris Elbon CE Off.	
	Notices of Violation (NOVs) / warning letters / citations issued for illicit discharges / connections / dumping found during a reactive investigation	1	Code Enforcement records	Chris Elbon CE Off.	Notice sent to Well Drilling Contractor
	Fines issued for illicit discharges / connections / dumping found during a reactive investigation	0			
	During Year 1 of the permit, develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, fleet maintenance staff, and inspectors) and contractors to identify and report conditions in the stormwater facilities that may indicate the presence of illicit discharges / connections / dumping to the MS4. Refresher training shall be provided annually. Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training). *DEP Note: If "0" is reported for either reporting item, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training was previously provided / obtained, and the names of the personnel and contractors previously trained.*				
		Initial Training	**Refresher Training**		
	Personnel trained	**5**	**25**	PWK NPDES files	Sarasota County, Web based Training / Certificates	
	Contractors trained	**0**			Sarasota County, Web based Training / Certificates	Contractors may be obtaining training at County level or web based certification.
Part III.A.7.d	**Illicit Discharges and Improper Disposal — Spill Prevention and Response**				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
	Annually review (and revise, as needed) and implement the permittee's written spill-prevention/spill-response plan and procedures to prevent, contain, and respond to spills that discharge into the MS4. Report on the spill prevention and response activities, including the number of spills addressed. *DEP Note: The permittee may report the number of hazardous material spills separately from the number of non-hazardous material spills, or report one combined number, to more accurately reflect its tracking of these spills.*				
	Hazardous and non-hazardous material spills responded to	20	Wintegrate Fire Department Call Records	Fire Dept Staff	20 reported but one was a vehicle hit structure incident.
	During Year 1 of the permit, develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, firefighters, fleet maintenance staff and inspectors) and contractors on proper spill prevention, containment, and response techniques and procedures. Refresher training shall be provided annually. Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training). *DEP Note: If "0" is reported for either reporting item, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training was previously provided / obtained, and the names of the personnel and contractors previously trained.*				
		Initial Training / **Refresher Training**			
	Personnel trained	**0** / **27**		Fire Department Training records	Fire Dept. Staff	6 new hire awaiting Initial Training.
	Contractors trained	**0** / **1**				Fuel delivery contracted vendor.
Part III.A.7.e	**Illicit Discharges and Improper Disposal — Public Reporting**				
	During Year 1 of the permit, develop and implement a written public education and outreach program plan to promote, publicize, and facilitate public reporting of the presence of illicit discharges and improper disposal of materials into the MS4. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the public reporting of suspected illicit discharges and improper disposal of materials, including the type and number of activities conducted, the type and number of materials distributed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). *DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting item of "Estimated percentage of the population reached by the activities in total" must remain. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items, please include in Column F an explanation for why no outreach was performed.* *DEP Note: IF APPLICABLE Sarasota County is to report the public education and outreach activities that it performed county-wide (and not just in the unincorporated areas of Sarasota County). The co-permittees are to report just the public education and outreach activities that they performed.*				
	Estimated percentage of the population reached by the activities in total	Est. 3%	Public Works NPDES /CRS files	James Linkogle, PWKPM	No tracking of response to effectiveness

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Brochures/Flyers/Fact sheets distributed	20-30	Public Works NPDES/CRS files	James Linkogle PWPM	Annual Town Open House at North Fire Station brochures on display table
	Newsletters: Number of newsletters distributed	7800	Public Works NPDES /CRS files	James Linkogle, PWKPM, Donna Spencer PW Admin. Mngr.	Annual Summer Newsletter to all residents has flood, and stormwater information.
	Special events: Number conducted	1	Public Works NPDES/CRS files	James Linkogle PWPM	Annual Town Open House at North Fire Station display table
	Special events: Number of participants	75-100	Public Works NPDES/CRS files	James Linkogle PWPM	Annual Town Open House at North Fire Station display table
	Web Site: Number of visitors to the stormwater-related pages	1	IT Dept. does not track hits		Town site has links and searches available
Part III.A.7.f	**Illicit Discharges and Improper Disposal — Oils, Toxics, and Household Hazardous Waste Control**				
	During Year 1 of the permit, develop and implement a written public education and outreach program plan to encourage the proper use and disposal of used motor vehicle fluids, leftover hazardous household products, and lead acid batteries. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the proper use and disposal of oils, toxics, and household hazardous waste, including the type and number of activities conducted, the type and number of materials distributed, the amount of waste collected / recycled / properly disposed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). *DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting items of "Estimated percentage of the population reached by the activities in total" and "Household Chemical Collection Center Program: Amount of waste collected / recycled / properly disposed (tons)" must remain. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items, please include in Column F an explanation for why no outreach was performed.* *DEP Note: IF APPLICABLE Sarasota County is to report the public education and outreach activities that it performed county-wide (and not just in the unincorporated areas of Sarasota County). The co-permittees are to report just the public education and outreach activities that they performed.*				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Estimated percentage of the population reached by the activities in total	40%	2850	Public Works Utility Bill notices, Donna Spencer PW Admin. Mngr.	We advertise for Island wide Collection day annually in each January
	Household Chemical Collection Center Program: Amount of waste collected / recycled / properly disposed (tons)	Qty. unknown	Waste Management Manatee County Solid Waste	Waste Management keeps collection records.	We did not receive report from Waste Management. on Haz Mat or e-scrap .
	Household Chemical Collection Center Program: Events	1	Manatee County Solid Waste	Manatee County	We advertise for Island wide Collection day annually in each January.
	Newspapers & newsletters: Number of articles/notices published	1	Public Works NPDES	Public Works Donna Spencer	We advertise for Island wide Collection day annually
	Special events: Number conducted	1	Public Works NPDES/CRS files	James Linkogle PWPM	Annual Town Open House at North Fire Station display table
	Special events: Number of participants	75-100	Public Works NPDES/CRS files	James Linkogle PWPM	Annual Town Open House at North Fire Station display table
	Storm sewer inlets newly marked/replaced	0	Public Works NPDES	Public Works Streets Dept Mark Richardson, Mark Kerr	Majority of Markers previously installed still in place.
	Web Site: Number of visitors to the stormwater-related pages	1	IT Dept. does not track hits		Town site has links and searches available
Part III.A.7.g	**Illicit Discharges and Improper Disposal — Limitation of Sanitary Sewer Seepage**				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Annually review (and revise, as needed) and implement the permittee's written procedures to reduce or eliminate sanitary wastewater contamination into the MS4, including discharges to the MS4 from sanitary sewer overflows (SSOs) and from inflow / infiltration from collection / transmission systems and/or septic tank systems. Advise the appropriate utility owner of a violation if constituents common to wastewater contamination are discovered in the MS4. Report on the type and number of activities undertaken to reduce or eliminate SSOs and inflow/ infiltration, the number of SSOs or inflow / infiltration incidents found and the number resolved, and the name of the owner of the sanitary sewer system within the permittee's jurisdiction. *DEP Note: The permittee needs to "customize" this section as it pertains to the type of activities undertaken to reduce or eliminate SSOs and inflow / infiltration into the MS4. The first five reporting items below are examples.* *DEP Note: The permittee should contact the appropriate authorities for accurate reporting information, such as the sanitary sewer system operator who is responsible for investigating and eliminating SSOs and the local health department who is responsible for permitting / overseeing septic tank systems.* *DEP Note: Report only the SSOs and inflow / infiltration incidents into the MS4.*				
	Activity to reduce/eliminate SSOs and inflow / infiltration: Sanitary sewer pipe inspected for infiltration (linear feet)	4832	Public Works Utilities	Joe Samblanet Utilities Service Worker	The town performs annual inspections of gravity sewer lines, CCTV inspections of gravity lines and laterals.
	Activity to reduce/eliminate SSOs and inflow / infiltration: Sanitary sewer pipe sealed, lined, and / or replaced (linear feet)	4832	Public Works Utilities	Joe Samblanet Utilities Service Worker	Conducted via various slip lining projects in identified areas as a result of inspections.
	Activity to reduce/eliminate SSOs and inflow / infiltration: Sanitary sewer line breaks repaired	80	Public Works Utilities	Joe Samblanet Utilities Service Worker	Leaks or breaks at clean-out connections repaired.
	Activity to reduce/eliminate SSOs and inflow / infiltration: Emergency generator added	0	Public Works Utilities	John Michael, Utilities Crew Leader	Purchased 2 portable 25 Kw Generators 2016
	SSO incidents discovered	0	Public Works Utilities	John Michael Utilities Service Crew Leader	No Qty. of spill reported.
	SSO incidents resolved	0	Public Works Utilities	John Michael Utilities Service Crew Leader	No Qty. of spill reported

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	**B.**	**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Inflow / infiltration incidents discovered	80	Public Works Utilities	Joe Samblanet Utilities Service Worker	Leaks or breaks at clean-out connections repaired.
	Inflow / infiltration incidents resolved	80	Public Works Utilities	Joe Samblanet Utilities Service Worker	Leaks or breaks at clean-out connections repaired.
	Name of owner of the sanitary sewer system	Town of Longboat Key Public Works Utilities			
Part III.A.8.a	**Industrial and High-Risk Runoff — Identification of Priorities and Procedures for Inspections**				

Continue to maintain an up-to-date inventory of all existing high risk facilities discharging into the permittee's MS4. The inventory shall identify the outfall and surface water body into which each high risk facility discharges. For the purposes of this permit, high risk facilities include:

- Operating municipal landfills;
- Hazardous waste treatment, storage, disposal and recovery facilities;
- Facilities that are subject to EPCRA Title III, Section 313 (also known as the Toxics Release Inventory (TRI) maintained by the U.S. EPA); and
- Any other industrial or commercial discharge that the permittee determines is contributing a substantial pollutant loading to the permittee's MS4. This could include facilities identified through the proactive inspection program as per Part III.A.7.c of the permit.

Report on the high risk facilities inventory, including the type and total number of high risk facilities and the number of facilities newly added each year. If a permittee relies on Sarasota County to conduct these activities on its behalf, the permittee shall obtain (and, upon request, Sarasota County shall make available) the necessary annual report information from the County.

DEP Note: The TRI is updated every spring / summer by the U.S. EPA at www.epa.gov/triexplorer. Select "Facility" on the left, chose your Geographic Location, and then select "Generate Report." Please indicate in Column F when (month / year) you last checked EPA's TRI for applicable facilities.

During Year 1 of the permit, develop and implement a written plan for conducting inspections of high risk facilities to determine compliance with all appropriate aspects of the stormwater program. While the permittee may determine the order and frequency of the inspections, the permittee shall inspect each identified facility at least once during the permit term; however, facilities identified as high risk due to the findings of the proactive inspection program as per Part III.A.7.c of the permit shall be inspected annually. Report on the high risk facilities inspection program, including the number of inspections conducted and the number and type of enforcement actions taken. . If a permittee relies on Sarasota County to conduct these activities on its behalf, the permittee shall obtain (and, upon request, Sarasota County shall make available) the necessary annual report information from the County

DEP Note: If "0" is reported for the number of inspections conducted and the permittee has one or more high risk facilities, please provide an explanation in Column F for why no inspections were conducted. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.

DEP Note: Sarasota County is to report ONLY the inventory of high risk facilities in the unincorporated areas of Sarasota County – the inventory of high risk facilities located in the co-permittees' jurisdictions are to be reported by the co-permittees. Likewise, the County is to report ONLY the high risk facility inspections it performed in the unincorporated areas of Sarasota County – any high risk facility inspections it performed in the co-permittees' jurisdictions are to be reported by the co-permittees. Each co-permittee is to obtain the necessary information from Sarasota County that pertains to its jurisdiction.

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.					C.	D.	E.	F.
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**					**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
		Number of Facilities	**Number of Inspections**	**For violations discovered during a high risk inspection**					
				Fines issued	**Notices of Violation (NOVs) / warning letters / citations issued**				
	Total high risk facilities	**0**							The Town has no high risk facilities
	New high risk facilities added to the inventory during the current reporting period	**0**							The Town has no high risk facilities
	Operating municipal landfills	**0**							The Town has no high risk facilities
	Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	**0**							The Town has no high risk facilities
	EPCRA Title III, Section 313 facilities (that are not landfills or HWTSDR facilities)	**0**							The Town has no high risk facilities
	Facilities determined as high risk by the permittee through the proactive inspections as per Part III.A.7.c	**0**							The Town has no high risk facilities
	Other facilities determined as high risk by the permittee (that are <u>not</u> facilities identified through the proactive inspections)	**0**							The Town has no high risk facilities
Part III.A.8.b	**Industrial and High-Risk Runoff — Monitoring for High Risk Industries**								
	Sampling of the discharge to the stormwater system may be required on an as-needed basis in the event that inspections of high-risk facilities disclose suspected illicit discharges to the MS4. New high-risk industrial facilities as defined in 40 CFR 122.26(d)(2)(iv)(C) must be evaluated to determine if the new discharge is contributing a substantial pollutant load to the MS4. The evaluation may include site-specific monitoring. Report the number of high risk facilities sampled.								
	High risk facilities sampled					0			The Town has no high risk facilities
Part III.A.9.a	**Construction Site Runoff — Site Planning and Non-Structural and Structural Best Management Practices**								
	Continue to implement the local codes or land development regulations and the written pre-construction site plan review procedures that require the use and maintenance of appropriate structural and non-structural erosion and sedimentation controls during construction to reduce the discharge of pollutants to the MS4. Report the number of permittee and private pre-construction site plans <u>reviewed for stormwater, erosion, and sedimentation controls</u>, and the number approved. *<u>DEP Note:</u> Please provide an explanation in Column F for any "0" reported in Column C.*								
	PERMITTEE SITES: Construction site plans reviewed					1	Wintegrate Permit Files	Planning Zoning Building Dept.	Bayfront Park Renovations

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
				Darin Cushing B.O.	
	PERMITTEE SITES: Construction site plans approved	1	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	Bayfront Park Renovations
	PRIVATE SITES: Construction site plans reviewed	127	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	
	PRIVATE SITES: Construction site plans approved	127	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	
	Annually review (and revise, as needed) and implement the permittee's written procedures to notify all new development / redevelopment permit applicants of the need to obtain all required stormwater permits. Report the number of new development/redevelopment permit applicants notified of the ERP and CGP, and the number of applicants who confirmed ERP and CGP coverage. *DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. If the number of applicants notified of ERP or CGP coverage is less than the number of construction site plans reviewed, please provide an explanation for the discrepancy in Column F.*				
	Notified of ERP stormwater permit requirements	1	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	Bayfront Park Renovations.
	Confirmed ERP coverage	1	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	Bayfront Park Renovations
	Notified of CGP stormwater permit requirements	1	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	Bayfront Park Renovations
	Confirmed CGP coverage	1	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	Bayfront Park Renovations
Part III.A.9.b	**Construction Site Runoff — Inspection and Enforcement**				
	As an attachment to the Year 1 Annual Report, the permittee shall submit a written plan that details the standard operating procedures for implementation of the stormwater, erosion and sedimentation inspection program for construction sites discharging stormwater to the MS4. The permittee shall implement the plan for inspecting construction sites immediately upon written approval by the Department. Prior to Department approval, the permittee shall continue to perform inspections in accordance with its previously developed construction site inspection procedures. Report on the inspection program for privately-operated and permittee-operated				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
	construction sites, including the number of active construction sites during the reporting year, the number of inspections of active construction sites, the percentage of active construction sites inspected, and the number and type of enforcement actions / referrals taken. *DEP Note: If "0" is reported in Column C for the number of inspections conducted, please provide an explanation in Column F of why no inspections were conducted. If the number of inspections reported is equal to or less than the number of active construction sites, or the percentage inspected is less than 100%, please provide an explanation in Column F. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.* *DEP Note: Refer to Part III.A.9.b of the permit for what must be included in the construction site inspection program plan. Please provide the title of the attached plan in Column D and the name of the entity who finalized the plan in Column E.*				
	PERMITTEE SITES: Active construction sites	1	Construction Progress Files	PW &Planning Zoning Building Dept. Inspectors	Bayfront Park Renovations
	PERMITTEE SITES: Inspections of active construction sites for proper stormwater, erosion and sedimentation BMPs	12	Construction Progress Files	PW & Planning Zoning Building Dept. Inspectors	Bayfront Park Renovations during progress on site meetings
	PERMITTEE SITES: Percentage of active construction sites inspected	100%	Construction Progress Files	PW & Planning Zoning Building Dept. Inspectors	Bayfront Park Renovations.
	PRIVATE SITES: Active construction sites	127	Wintegrate Permit Files	Planning Zoning Building Dept. Inspectors.	
	PRIVATE SITES: Inspections of active construction sites for proper stormwater, erosion and sedimentation BMPs	749	Wintegrate Permit Files	Planning Zoning Building Dept. Inspectors.	Quantity of inspections are a result of Multi-unit complexes that require an insp. record for each type or trade.
	PRIVATE SITES: Percentage of active construction sites inspected	99.9%	Wintegrate Permit Files	Planning Zoning Building Dept. Inspectors	One project not triggered for tracking via computer system at permit issuance.
	Red Tags issued	1	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	3.52 Acre Bon-Aire site

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A. Permit Citation/ SWMP Element	**B. Permit Requirement/Quantifiable SWMP Activity**	**C. Number of Activities Performed**	**D. Documentation / Record**	**E. Entity Performing the Activity**	**F. Comments**
	Notices of Violation (NOVs) issued	26	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	All complied with request for corrections to BMP's
	Stop Work Orders issued	1	Wintegrate Permit Files	Planning Zoning Building Dept. Darin Cushing B.O.	One for NPDES non- compliance; 3.52 Acre Bon-Aire site
	Fines issued	0			All complied
	Year 1 ONLY: Attach the written construction site inspection program plan		Planning Zoning Building Dept. Files	Planning Zoning Building Dept. Darin Cushing B.O.	Submitted in Year One
Part III.A.9.c	**Construction Site Runoff — Site Operator Training**				

During Year 1 of the permit, develop and implement a written plan for stormwater training / outreach for construction site plan reviewers, site inspectors and site operators. Provide training for permittee personnel (employed by or under contract with the permittee) involved in the site plan review, inspection or construction of stormwater management, erosion, and sedimentation controls. Also provide training for private construction site operators. All permittee inspectors (employed by or under contract with the permittee) of construction sites shall be certified through the Florida Stormwater, Erosion and Sedimentation Control Inspector Training program, or an equivalent program approved by the Department. Refresher training shall be provided annually. Report the type of training activities, the number of inspectors, site plan reviewers and site operators trained (both in-house and outside training), and the number of private construction site operators trained by the permittee.

DEP Note: If "0" is reported for any of these reporting items, please include in Column F an explanation of why training was not provided to / obtained by the permittee's staff and private construction site operators during the applicable reporting year.

DEP Note: The permittee should report only the number of staff and private construction site operators trained / certified during the applicable reporting year, and then note in Column F the number of staff who were previously trained / certified. Private site operator training can include pre-construction meetings.

	Certification Training	**Initial Training (non-certification)**	**Refresher Training**				
Permittee construction site inspectors	**0**		**4**			Via review of Power Point Presentation	Review of FSA Level 1 Stormwater Operators Certification Course
Permittee construction site plan reviewers			**1**			Via review of Power Point Presentation	
Permittee construction site operators		**1**	**3**				One Town Project this year.

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.				C.	D.	E.	F.
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**				**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Private construction site operators		**2**	2				Informal Pre-Construction Meetings

SECTION VIII. EVALUATION OF THE STORMWATER MANAGEMENT PROGRAM (SWMP)

	Permit Citation/ SWMP Element	SWMP EVALUATION
A.	**Part II.A.1 Structural control inspection and maintenance**	Strengths: The majority of the Town stormwater system is catch basin to outfalls within 100 feet.
		Weaknesses: The majority of the stormwater systems within the Town are privately maintained. The Town monitors but does not collect records. Any potential impacts are immediate due to direct outfall in many locations.
		SWMP Revisions to address deficiencies: None
	Part II.A.2 Significant redevelopment	Strengths: The Town is 95% to 98% developed. Most redevelopment is smaller scale parcels and individual lots.
		Weaknesses: Undetermined. Most redevelopment occurs within individual lot/parcel boundaries.
		SWMP Revisions to address deficiencies: None
	Part II.A.3 Roadways	Strengths: The major thorough fare road is FDOT right of way, State Road 789, Town streets are swept quarterly, only 36 curb miles total.
		Weaknesses: None
		SWMP Revisions to address deficiencies: None
	Part II.A.4 Flood control	Strengths: The Town is currently looking into long term studies/plans to address vulnerability. Town is highly rated for National Flood Insurance Program activities.
		Weaknesses: The Town is a Coastal Barrier Island that lies completely within a Special Flood Hazard Area per FEMA Flood Insurance Rate Maps.
		SWMP Revisions to address deficiencies: None
	Part II.A.5 Waste TSD Facilities	Strengths: The Town Has none
		Weaknesses: None
		SWMP Revisions to address deficiencies: None

SECTION VIII. EVALUATION OF THE STORMWATER MANAGEMENT PROGRAM (SWMP)		
	Part II.A.6 Pesticide, herbicide, fertilizer application	Strengths: The Fertilizer Management Code has been in effect since 2008.
		Weaknesses: Hard to control, primarily done state wide via retail outlets for seasonal applications.
		SWMP Revisions to address deficiencies: None
	Part II.A.7 Illicit Discharge Detection and Elimination	Strengths: The Town in general experiences very few incidents and or reports.
		Weaknesses: The Town has experienced staffing changes and Code Enforcement positions.
		SWMP Revisions to address deficiencies: Improve Public Outreach and Training opportunities and coordinate with County.
	Part II.A.8 High Risk Industry Runoff	Strengths: The Town has no High Risk Industrial facilities.
		Weaknesses: None
		SWMP Revisions to address deficiencies: None
	Part II.A.9 Construction Site Runoff	Strengths: The Town has incorporated required inspections for each and any type of inspection request for every new construction permit issued.
		Weaknesses: Coordination with inter-departmental responsibilities, still in process of upgrading and replacing entire computerized management systems.
		SWMP Revisions to address deficiencies: None

SECTION IX. CHANGES TO THE STORMWATER MANAGEMENT PROGRAM (SWMP) ACTIVITIES (Not Applicable In Year 4)		
A.	**Permit Citation/ SWMP Element**	**Proposed Changes to the Stormwater Management Program Activities Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change) — REQUIRES DEP APPROVAL PRIOR TO CHANGE IF PROPOSING TO REPLACE OR DELETE AN ACTIVITY.** *DEP Note: There may be changes deemed necessary after developing / reviewing your plans and SOPs as per Part III.A of the permit, after completing your SWMP evaluation as per Part VI.B.2 of the permit, or due to a TMDL / BMAP as per Part VIII.B of the permit.*
B.	**Permit Citation/ SWMP Element**	**Changes to the Stormwater Management Program Activities NOT Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change)** *DEP Note: There may be changes deemed necessary after developing / reviewing your plans and SOPs as per Part III.A of the permit, after completing your SWMP evaluation as per Part VI.B.2 of the permit, or due to a TMDL / BMAP as per Part VIII.B of the permit.*

CHECKLIST A: ATTACHMENTS TO BE SUBMITTED WITH THE ANNUAL REPORTS

Below is a list of items required by the permit that may need to be attached to the annual report. Please check the appropriate box to indicate whether the item is attached or is not applicable for the current reporting period. Please provide the number and the title of the attachments in the blanks provided.

Attached	N/A	Rule / Permit Citation	Required Attachment	Attachment Number	Attachment Title
☐	☒	Part II.F	**EACH ANNUAL REPORT:** If program resources have decreased from the previous year, a discussion of the impacts on the implementation of the SWMP.		
☐	☒	Part III.A.1	**EACH ANNUAL REPORT:** An explanation of why the minimum inspection frequency in Table II.A.1.a was not met, if applicable.		
☐	☒	Part III.A.4	**EACH ANNUAL REPORT:** A list of the flood control projects that did not include stormwater treatment and an explanation for each of why it did not, if applicable.		
☐	☒	Part III.A.7.a	**EACH ANNUAL REPORT:** A report on amendments / changes to the legal authority to control illicit discharges, connections, dumping, and spills, if applicable.		
☒	☐	Part V.B.9	**EACH ANNUAL REPORT:** Reporting and assessment of monitoring results. **[Also addressed in Section III of the Annual Report Form]**	See Sec III, and **Attachment "A"**	**Attachment A**, and included as part of Sarasota County Report
☐	☒	Part VI.B.2	**EACH ANNUAL REPORT:** An evaluation of the effectiveness of the SWMP in reducing pollutant loads discharged from the MS4 that, at a minimum, must include responses to the questions listed in the permit.	See Sec VIII	
☐	☒	Part VIII.B.3.e	**EACH ANNUAL REPORT:** A status report on the implementation of the requirements in this section of the permit and on the estimated load reductions that have occurred for the pollutant(s) of concern.		
☐	☒	Part VIII.B.4.f	**EACH ANNUAL REPORT after approval of the BPCP:** The status of the implementation of the Bacterial Pollution Control Plan (BPCP).		
☐	☒	Part III.A.1	**YEAR 1:** An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM).	Submitted Yr. 1	Submitted Year 1
☐	☒	Part III.A.3	**YEAR 1:** If have curbs and gutters but no street sweeping program, an explanation of why no street sweeping program and the alternate BMPs used or planned.		Submitted Year 1
☐	☒	Part III.A.6	**YEAR 1 or YEAR 2:** A copy of the adopted Florida-friendly Ordinance, if applicable.	Submitted Yr. 1	Submitted Year 1
☐	☒	Part III.A.7.c	**YEAR 1:** A proactive illicit discharge / connection / dumping inspection program plan.	Submitted Yr. 1	Submitted Year 1
☐	☒	Part III.A.9.b	**YEAR 1:** A construction site inspection program plan. **[For approval by DEP]**	Submitted Yr. 1	Submitted Year 1
☐	☒	Part III.A.2	**YEAR 2:** A summary report of a review of codes and regulations to reduce the stormwater impact from new development / redevelopment.	Submitted in Year 2	Submitted in Year 2.
☒	☐	Part V.A.2	**YEAR 3:** Estimates of annual pollutant loadings and EMCs, and a table comparing the current calculated loadings with those from the previous two Year 3 ARs.	See Sec III, and **Attachment "A"**	**Attachment A**, and included as part of Sarasota County Report
☐	☒	Part III.A.2	**YEAR 4:** A follow-up report on plan implementation of changes to codes and regulations to reduce the stormwater impact from new development / redevelopment.		
☐	☒	Part V.A.3	**YEAR 4:** If the total annual pollutant loadings have not decreased over the past two permit cycles, revisions to the SWMP, as appropriate.		
☐	☒	Part V.B.3	**YEAR 4:** The monitoring plan (with revisions, if applicable).		
☐	☒	Part VII.C	**YEAR 4:** An application to renew the permit.		
☐	☒	Part VIII.B.3.d	**YEAR 4:** A TMDL Implementation Plan / Supplemental SWMP.		

CHECKLIST B: THE REQUIRED ANNUAL REVIEWS OF WRITTEN STANDARD OPERATING PROCEDURES (SOPs) & PLANS

The permit requires annual review, and revision if needed, of written Standard Operating Procedures (SOPs) and plans (e.g., public education and outreach, training, inspections). Please indicate your review status below. **If you have made revisions that need DEP approval, you must complete Section VIII.A of the annual report.**

Did not complete review of existing SOP / Plan	Developed new written SOP / Plan	Reviewed & no revision needed to existing SOP / Plan	Reviewed & revised existing SOP / Plan	Permit Citation	Description of Required SOPs / Plans
☐	☐	☒	☐	Part III.A.1	SOP and/or schedule of inspections and maintenance activities of the structural controls and roadway stormwater collection system.
☐	☐	☒	☐	Part III.A.2	SOP for development project review and permitting procedures and/or local codes and regulations for new development / areas of significant development.
☐	☐	☒	☐	Part III.A.3	SOP for the litter control program.
☐	☐	☒	☐	Part III.A.3	SOP for the street sweeping program.
☐	☐	☒	☐	Part III.A.3	SOP for inspections of equipment yards and maintenance shops that support road maintenance activities.
☒	☐	☐	☐	Part III.A.5	SOP for inspections of waste treatment, storage, and disposal facilities not covered by an NPDES stormwater permit.
☐	☐	☒	☐	Part III.A.6	Plan for public education and outreach on reducing the use of pesticides, herbicides and fertilizer.
☐	☐	☒	☐	Part III.A.6	SOP for reducing the use of pesticides, herbicides and fertilizer, and for the proper application, storage and mixing of these products.
☐	☐	☒	☐	**Part III.A.7.c**	**Plan for proactive illicit discharge / connections / dumping inspections.***
☐	☐	☒	☐	Part III.A.7.c	SOP for reactive illicit discharge / connections / dumping investigations.
☐	☐	☒	☐	Part III.A.7.c	Plan for illicit discharge training.
☐	☐	☒	☐	Part III.A.7.d	SOP for spill prevention and response efforts.
☐	☐	☒	☐	Part III.A.7.d	Plan for spill prevention and response training.
☐	☐	☒	☐	Part III.A.7.e	Plan for public education and outreach on how to identify and report the illicit discharges and improper disposal to the MS4.
☐	☐	☒	☐	Part III.A.7.f	Plan for public education and outreach on the proper use and disposal of oils, toxics and household hazardous waste.
☐	☐	☒	☐	Part III.A.7.g	SOP to reduce / eliminate sanitary wastewater contamination of the MS4.
☒	☐	☐	☐	Part III.A.8	SOP for inspections of high risk industrial facilities.
☐	☐	☒	☐	Part III.A.9.a	SOP for construction site plan review for stormwater, erosion and sedimentation controls, and ERP and CGP coverage.
☐	☐	☒	☐	**Part III.A.9.b**	**Plan for inspections of construction sites.***
☐	☐	☒	☐	Part III.A.9.c	Plan for stormwater, erosion and sedimentation BMPs training.

*** Revisions to these plans require DEP approval – please complete Section VIII.A of the annual report.**

REMINDER LIST OF THE TMDL / BMAP REPORTS TO BE SUBMITTED SEPARATELY FROM AN ANNUAL REPORT		
Rule / Permit Citation	**Report Title**	**Due Date**
Part VIII.B.3.a	**6 MONTHS from effective date of permit:** TMDL Prioritization Report.	7/1/14
Part VIII.B.3.b	**12 MONTHS from effective date of permit:** TMDL Monitoring and Assessment Plan.	1/1/15
Part VIII.B.3.c	**6 MONTHS from receiving analyses from the lab:** TMDL Monitoring Report.	TBD
Part VIII.B.4	**30 MONTHS from start date per TMDL Prioritization Report:** A Bacterial Pollution Control Plan (BPCP).	TBD

BMAP Reporting

MS4 permittees are NOT required to submit the annual report required by any BMAP that applies to them since the NPDES Stormwater Staff can obtain them from the department's Watershed Planning and Coordination staff. However, to assure that the stormwater staff are aware of which BMAPs apply to the MS4 permittees and when the latest BMAP annual report was submitted, please complete the information below, if applicable:

Rule/Permit Citation	BMAP Title	Date BMAP Annual Report Submitted to DEP
Part VIII.B.2		
Part VIII.B.2		
Part VIII.B.2		
Part VIII.B.2		

END OF REVISED TAILORED MS4 AR FORM

CYCLE 3 PERMIT

Attachment A

Longboat Key Annual Report

2016

Monitoring Program

The monitoring reports are located on the **Sarasota County Water Atlas** site at:

Part A.

1. *Ambient Water Quality of Bays.*
   http://www.sarasota.wateratlas.usf.edu/bay-conditions/
   http://www.sarasota.wateratlas.usf.edu/water-quality-trends/

2. *Ambient Water Quality of Watersheds*
   http://www.sarasota.wateratlas.usf.edu/creek-conditions/
   http://www.sarasota.wateratlas.usf.edu/water-quality-trends/

3. *Biological Monitoring – Oysters*
   http://www.sarasota.wateratlas.usf.edu/oysters/

4. *Biological Monitoring – Seagrass*
   http://www.sarasota.wateratlas.usf.edu/seagrass/#sarasota-seagrass

5. *Biological Monitoring – Scallops*
   http://www.sarasota.wateratlas.usf.edu/upload/documents/2016-Scallop-Update-051117.pdf

6. *Pollutant Load Modeling*
   http://www.sarasota.wateratlas.usf.edu/upload/documents/PLM-Full-Report-NPDES-03May2017-corrected.pdf

7. *Rainfall*
   http://www.sarasota.wateratlas.usf.edu/rainfall/
   http://www.sarasota.wateratlas.usf.edu/datamapper/

The Bay Conditions Report is included with the Sarasota County Report and on the Sarasota Water Atlas website for Sarasota Bay adjacent waters to Longboat Key. *http://www.sarasota.wateratlas.usf.edu/coastal/conditions-overview.aspx*

1. All 6 bays were in the Caution category of the Bay Conditions Index. The Index is based on chlorophyll, nitrogen and phosphorus.

2. Nine of 17 creeks passed the Creek Condition Index and 8 were in the Caution category. The index is based on chlorophyll, nitrogen, phosphorus and dissolved oxygen

3. Oysters: fourteen stations ranked excellent with greater than 75% live oysters. Eight stations fell into the “good” category (50%-75% live oysters). Two stations were in the caution category with less than 50% live.

4. Seagrass: Three of 6 bays had increased acreage of seagrass and three had declines. As compared to 2015, there were increases in seagrass abundance, blade length, and percent Halodule. There were decreases in drift algae, and percent Thalassia.

5. Scallop monitoring sites throughout the county had significantly less spat landings in 2016. The county experienced concentrated rainfall events and persistent redtide blooms, each of these conditions have shown to have a negative affect scallop populations.

6. Pollutant Load Modeling was completed for 2001, 2006, 2010 and 2016. It showed increases from pollutant sources like land development, septic systems, and wastewater, plus decreases from stormwater projects and wastewater and septic improvements.

7. Rain for the year was 5 inches above average primarily because of two wet months – January and August. Unusually dry months were September, November and December.

Summary:

The overall health in Sarasota Bay degraded slightly in 2016, changing from the previous year. Chlorophyll *a* showed a clear increase, while phosphorus and nitrogen slightly decreased.

Water Quality: Two of the three water quality indicators (nitrogen and phosphorus) were rated as excellent (below their respective targets). However, chlorophyll *a* exceeded the target and threshold values. The mean for chlorophyll *a* was calculated as an arithmetic mean and the means for nitrogen and phosphorus were calculated as geometric means (per the Numeric Nutrient Criteria outlined in the Florida Administrative Code, section 62-302.532). Mean chlorophyll *a* concentration was 0.0067 mg/l, above the target value of 0.0052 mg/l and the threshold of 0.0061 mg/l. The mean concentration of total nitrogen decreased marginally 6 to 0.3528 mg/l, still below its target value of 0.51 mg/l . Mean total phosphorus concentration increased marginally, but at 0.0639 mg/l was still well below its target value of 0.150 mg/l.

Biotic Indicator: A survey of the biotic indicator, seagrass, was performed in 2016 by the Southwest Florida Water Management District. In 2016, the total area of seagrass in the lower portion of Sarasota Bay (the area within Sarasota County) was estimated to be 3,639 acres, well above the target of 2,022 acres.

**A new target value for nitrogen has not been defined for Sarasota Bay because insufficient color data exist to perform the necessary calculation.*

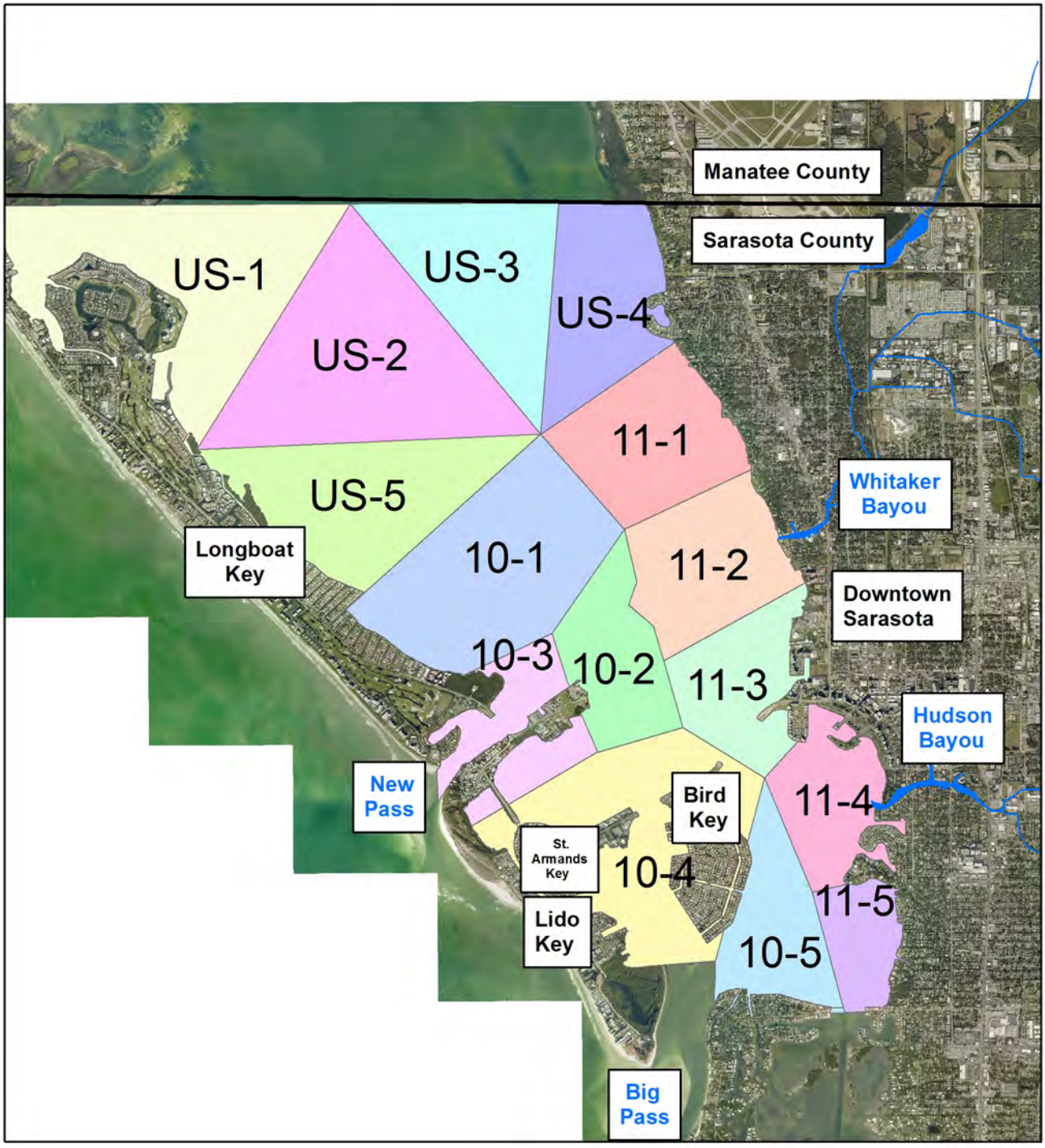
Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summaries

1. Ambient Water Quality of Bays
2. Ambient Water Quality of Watersheds
3. Biological Monitoring – Oysters
4. Biological Monitoring – Seagrass
5. Biological Monitoring – Scallops
6. Pollutant Load Modeling
7. Rainfall
8. TMDL Status Report
9. Sarasota County Monitoring Plan

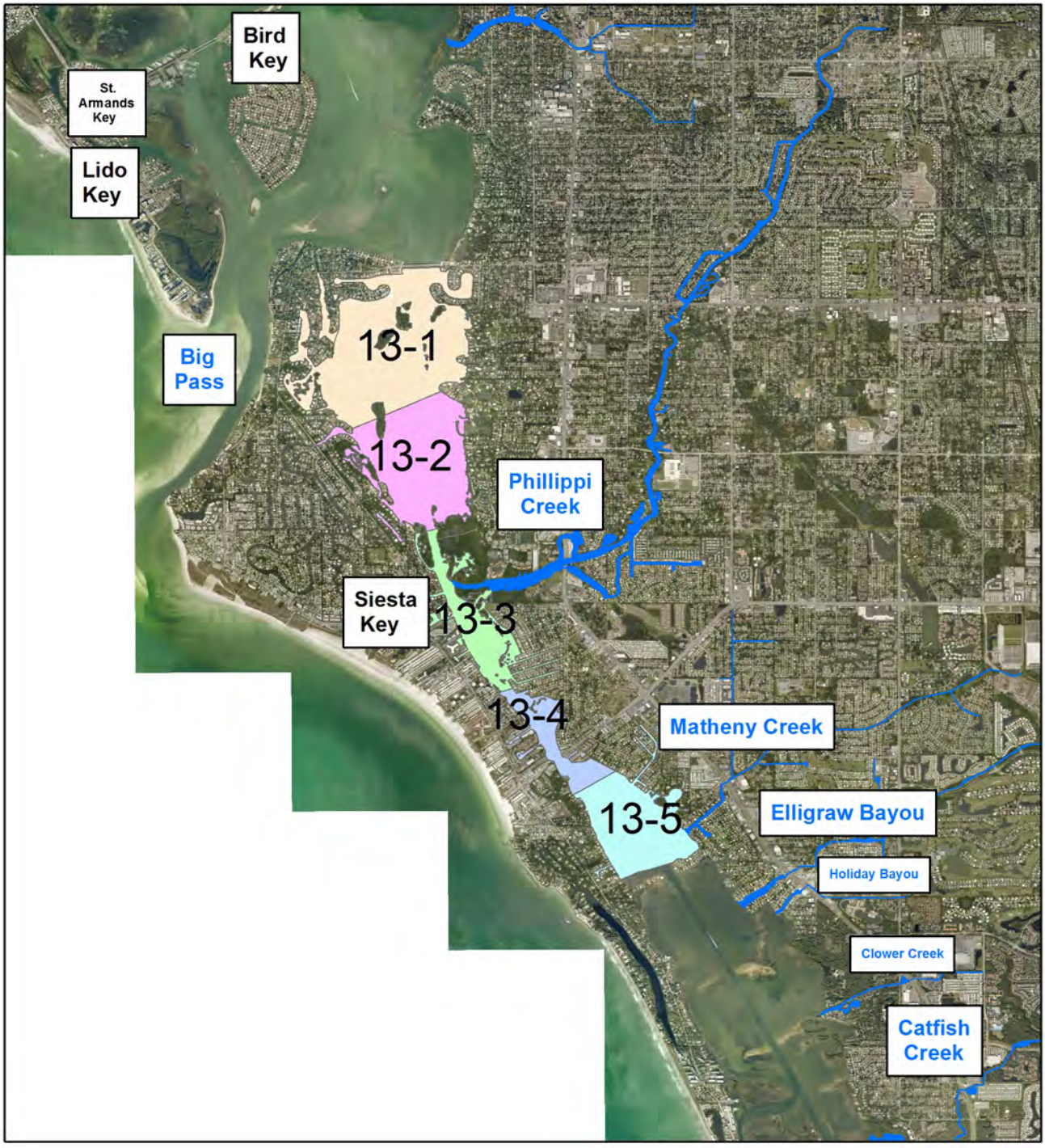
Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

1. Ambient Water Quality of Bays

Sarasota Bay Segments



Roberts Bay Segments



N

1 0.5 0 1

Miles

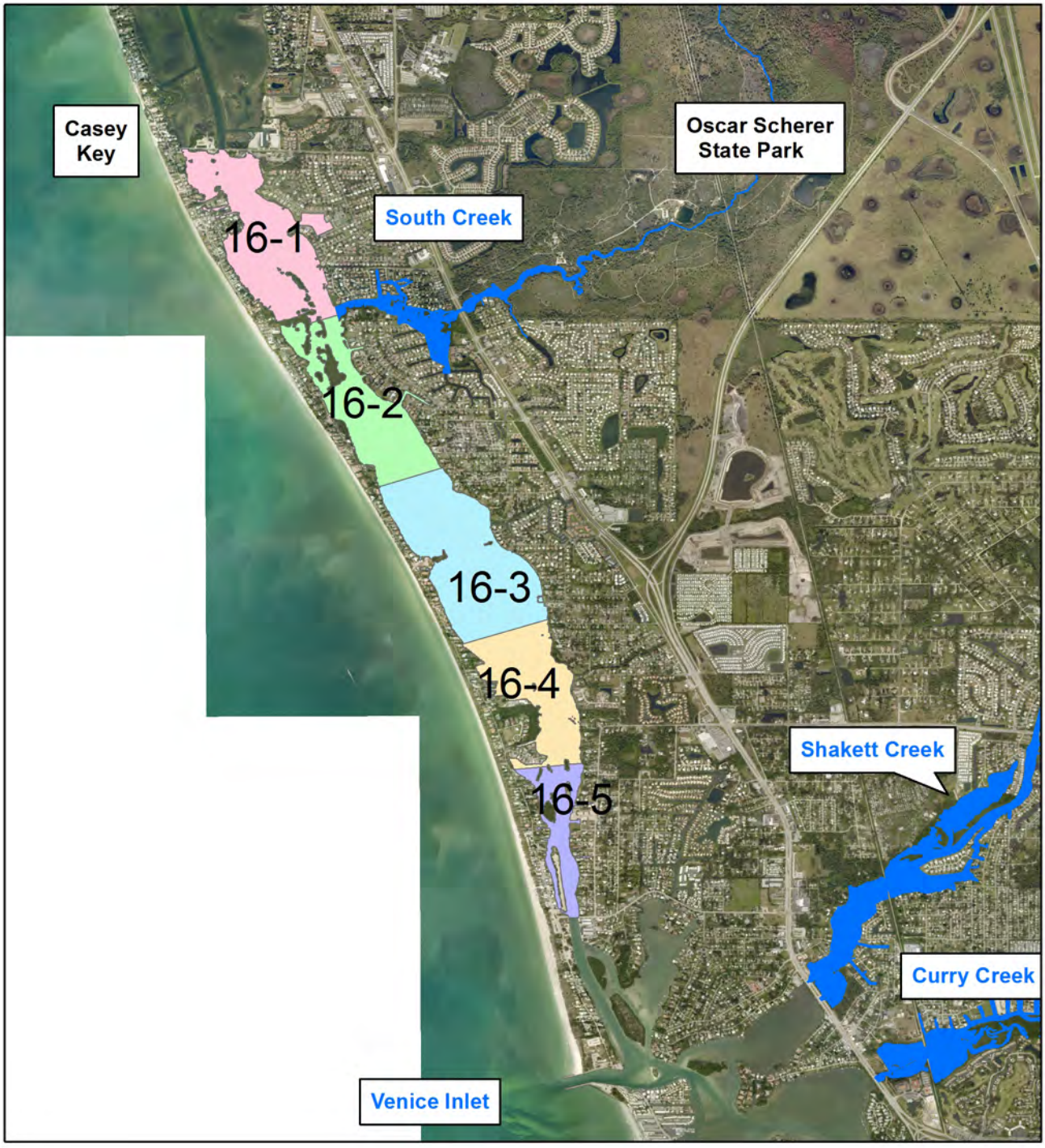
Little Sarasota Bay Segments

N

1 0.5 0 1

Miles

Blackburn Bay Segments

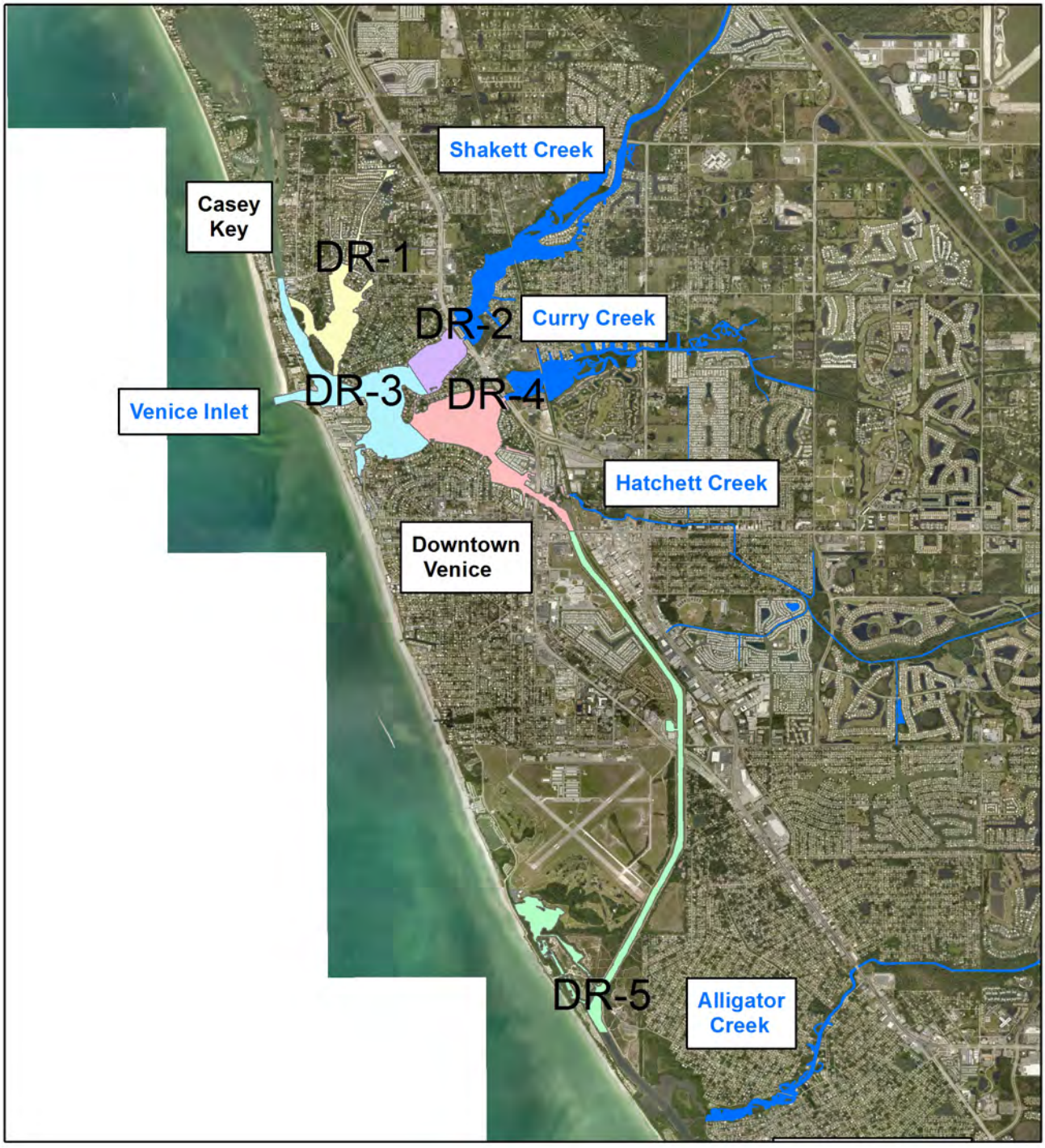


N

1 0.5 0 1

Miles

Dona - Roberts Bay Segments

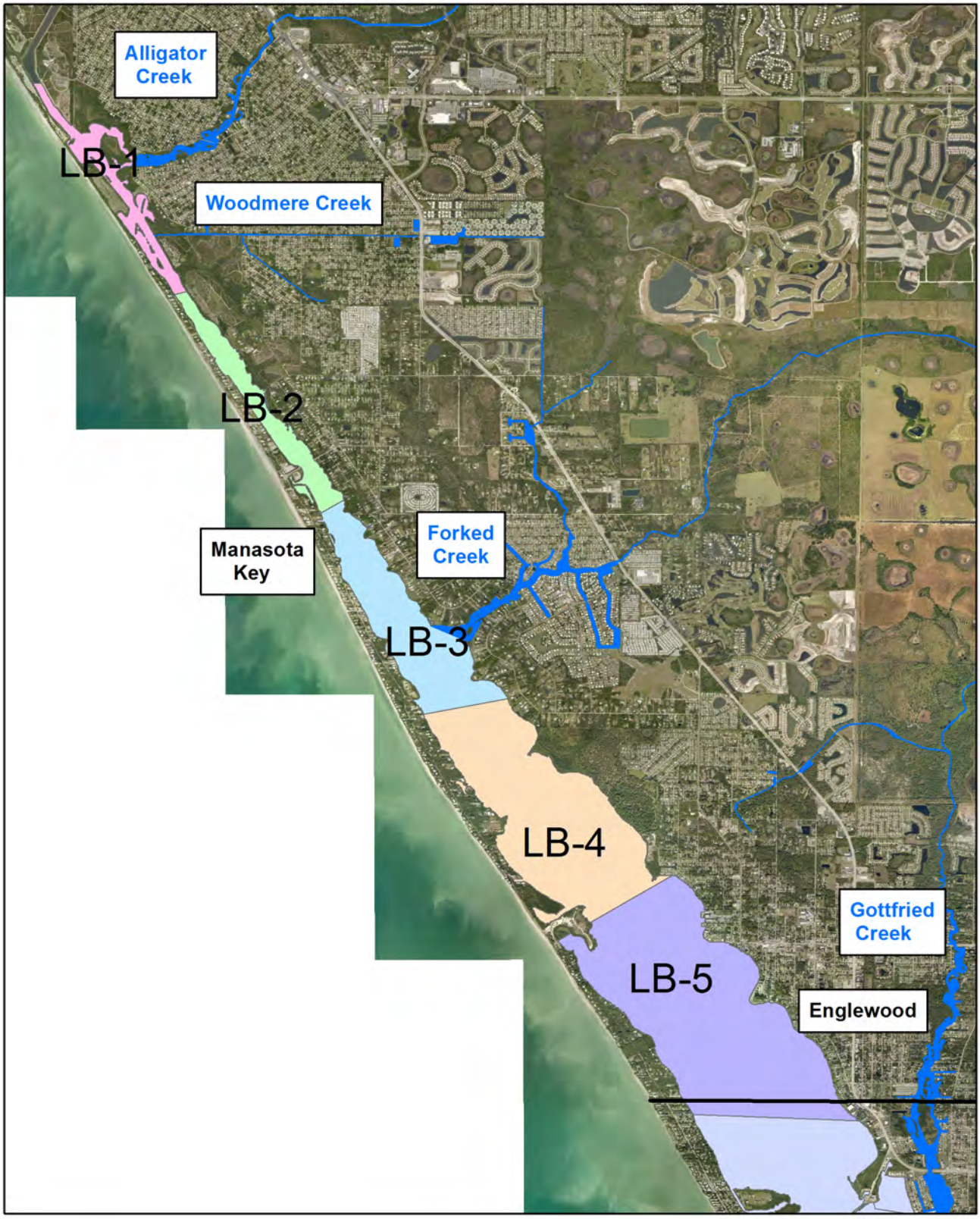


N

1 0.5 0 1

Miles

Lemon Bay Segments



Ambient Water Quality of Bays
Reporting and Assessment of Monitoring Results

Healthy bays have intrinsic value to marine life, human quality of life, and the local economy. As a monitoring tool, water quality of bays integrates the cumulative effects of watershed management. The foremost example of this is the use of seagrass as an integrated measure for managing nitrogen that comes from the watersheds. This relationship is the foundation of estuarine standards throughout Southwest Florida.

Summary of Monitoring Data from 2016 Reporting Year

Data is summarized on the Sarasota Water Atlas website on the Bay Conditions Pages and on the new Water Quality Trends Pages. Data can also be downloaded.

Long Term Assessment

Six bays were assessed for Bay Conditions using chlorophyll, nitrogen and phosphorus parameters and the information is available at (http://www.sarasota.wateratlas.usf.edu/bay-conditions/). Phosphorus targets were met in all bays and nitrogen targets were met for half of the bays. Results from 2016 show caution levels for all bays, meaning that a passing grade was not met for at least one parameter. None of the bays met the threshold for chlorophyll and three did not meet the nitrogen threshold – Roberts Bay, Dona/Roberts Bays, and Lemon Bay. There is no known pollution source throughout the County that would cause elevated chlorophyll in every bay. It is thought that this may be from a regional effect such as atmospheric deposition or weather and bay circulation patterns. This pattern highlights the necessity for watershed management to protect the highly valued bays of Sarasota County.

Bay Conditions Time Series 2010-2016

Bay Conditions	Sarasota Bay	Roberts Bay	Little Sarasota Bay	Blackburn Bay	Dona / Roberts Bay	Lemon Bay
2010	Pass	Caution	Caution	Pass	Caution	Caution
2011	Pass	Pass	Pass	Pass	Caution	Pass
2012	Pass	Pass	Pass	Pass	Caution	Caution
2013	Pass	Pass	Pass	Pass	Caution	Caution
2014	Pass	Pass	Pass	Pass	Caution	Caution
2015	Pass	Caution	Caution	Pass	Caution	Caution
2016	Caution	Caution	Caution	Caution	Caution	Caution
Chlorophyll	**Sarasota Bay**	**Roberts Bay**	**Little Sarasota Bay**	**Blackburn Bay**	**Dona / Roberts Bay**	**Lemon Bay**
2010	Pass	Caution	Caution	Pass	Caution	Caution
2011	Pass	Pass	Pass	Pass	Caution	Pass
2012	Pass	Pass	Pass	Pass	Pass	Caution
2013	Pass	Pass	Pass	Pass	Caution	Caution
2014	Pass	Pass	Pass	Pass	Caution	Pass
2015	Pass	Caution	Caution	Pass	Caution	Caution
2016	Caution	Caution	Caution	Caution	Caution	Caution
Nitrogen	**Sarasota Bay**	**Roberts Bay**	**Little Sarasota Bay**	**Blackburn Bay**	**Dona / Roberts Bay**	**Lemon Bay**
2010	Pass	Pass	Pass	Pass	Caution	Caution
2011	Pass	Pass	Pass	Pass	Caution	Pass
2012	Pass	Pass	Pass	Pass	Caution	Caution
2013	Pass	Pass	Pass	Pass	Caution	Caution
2014	Pass	Pass	Pass	Pass	Caution	Caution
2015	Pass	Pass	Pass	Pass	Caution	Caution
2016	Pass	Caution	Pass	Pass	Caution	Caution
Phosphorus	**Sarasota Bay**	**Roberts Bay**	**Little Sarasota Bay**	**Blackburn Bay**	**Dona / Roberts Bay**	**Lemon Bay**
2010	Pass	Pass	Pass	Pass	Pass	Pass
2011	Pass	Pass	Pass	Pass	Pass	Pass
2012	Pass	Pass	Pass	Pass	Pass	Pass
2013	Pass	Pass	Pass	Pass	Pass	Pass
2014	Pass	Pass	Pass	Pass	Pass	Pass
2015	Pass	Pass	Pass	Pass	Pass	Pass
2016	Pass	Pass	Pass	Pass	Pass	Pass

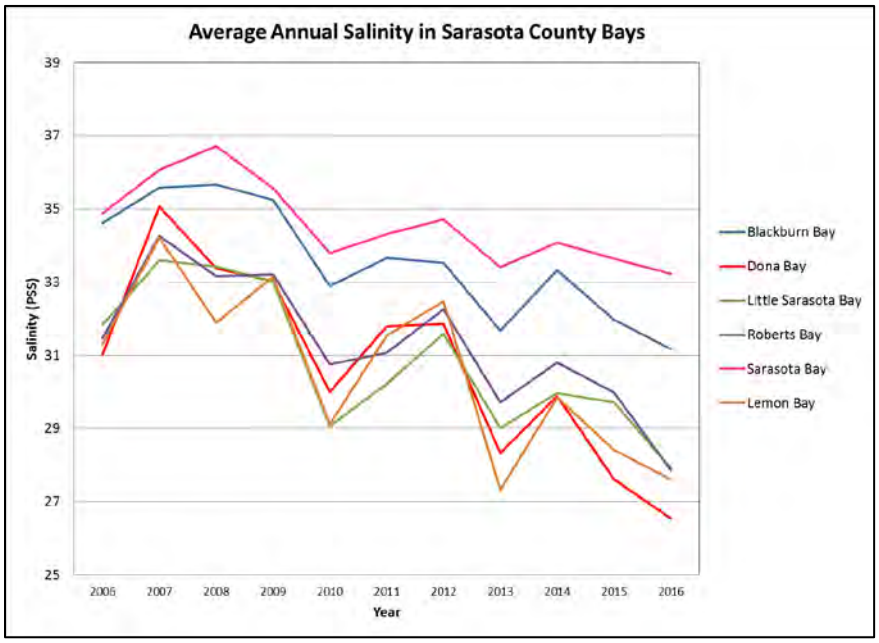
The Bay Conditions pages also provide five year trend graphs for dissolved oxygen, light attenuation, salinity, and turbidity plus information about seagrass acreage and land use. The table below is simply observations of apparent trends as seen on the graphs online. Seagrass declines in Little Sarasota Bay and Blackburn Bay may be related to increased light attenuation, declines in salinity, and increased turbidity in Blackburn Bay.

	Sarasota Bay	Roberts Bay	Little Sarasota Bay	Blackburn Bay	Dona / Roberts Bay	Lemon Bay
Dissolved Oxygen	Flat	Flat	Flat	Flat	Flat	Flat
Light Attenuation	Up	Flat	Up	Up	Up	Up
Salinity	Flat	Down	Down	Down	Down	Down
Turbidity	Up	Flat	Flat	Up	Flat	Flat
Seagrass	Up	Up	Down	Down	Flat	Flat
Urban Land Use in Watershed	62.1%	62.1%	43.1%	43.1%	40.4%	40.4%
	This is just a visual assessment, not a statistical trend test, and is intended to provide an sense of changes to water quality conditions.					

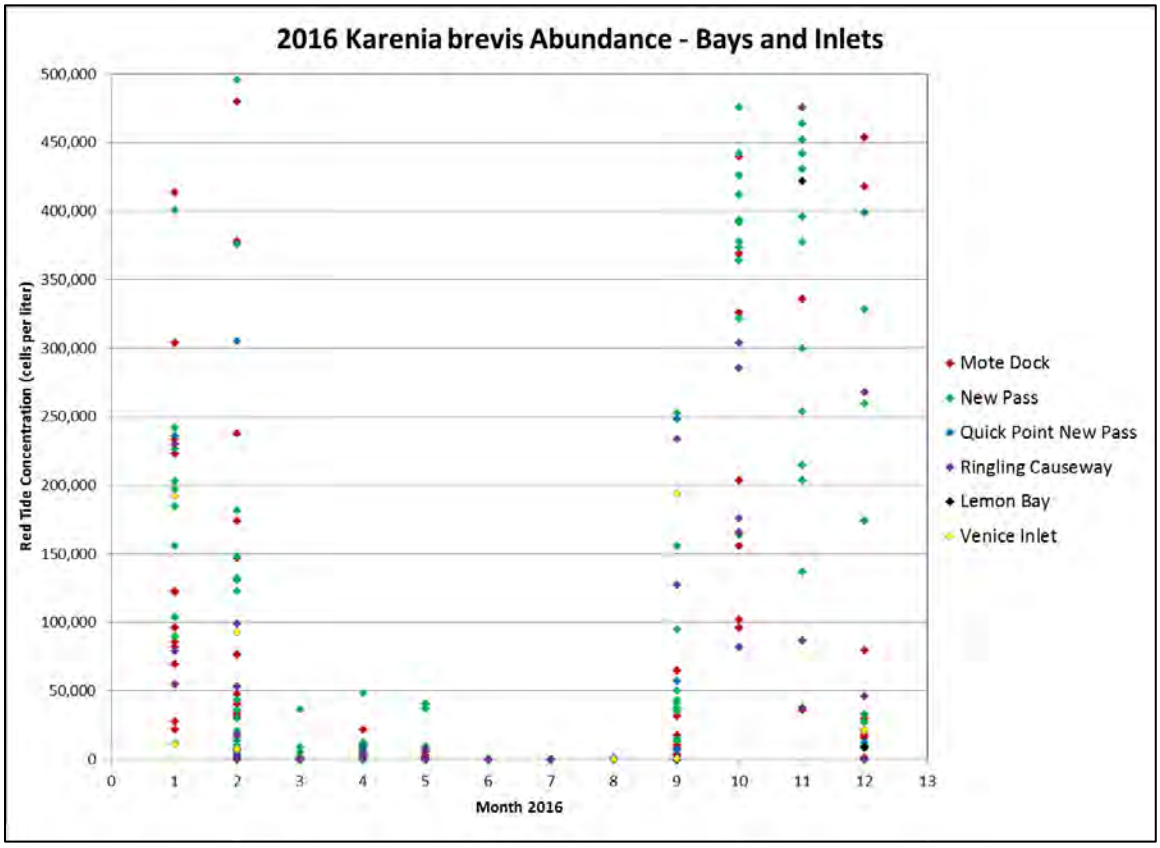
Statistically significant trend analysis for Nitrogen, Chlorophyll-a, and Dissolved Oxygen for both the period of record (POR) and the preceding 10 years is on the Sarasota Water Atlas (http://www.sarasota.wateratlas.usf.edu/water-quality-trends/). Each station is characterized as no trend, or positive or negative trends at a smaller rate or larger rate.

	Sarasota Bay	Roberts Bay	Little Sarasota Bay	Blackburn Bay	Dona / Roberts Bays	Lemon Bay
Total Nitrogen Period of Record 1998-2016	15 of 15 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate
Total Nitrogen 10 Year 2007-2016	15 of 15 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate
Chlorophyll-A Period of Record 1998-2016	6 of 15 sample sites negative trend, smaller rate; 9 of 15 sample sites no trend	4 of 5 sample sites negative trend, smaller rate; 1 of 5 sample sites not trend	1 of 5 sample sites negative trend, smaller rate; 4 of 5 sample sites no trend	5 of 5 sample sites no trend	5 of 5 sample sites negative trend, smaller rate	2 of 5 sample sites negative trend, smaller rate; 3 of 5 sample sites no trend
Chlorophyll-A 10 Year 2007-2016	7 of 15 sample sites negative trend, smaller rate; 8 of 15 sample sites no trend	5 of 5 sample sites negative trend, smaller rate	4 of 5 sample sites negative trend, smaller rate; 1 of 5 sample sites no trend	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate	5 of 5 sample sites negative trend, smaller rate
Dissolved Oxygen Period of Record 1998-2016	15 of 15 sample sites no trend	1 of 5 sample sites positive trend,smaller rate; 4 of 5 sample sites no trend	4 of 5 sample sites positive trend, smaller rate; 1 of 5 sample sites no trend	4 of 5 sample sites negative trend, smaller rate; 1 of 5 sample sites no trend	1 of 5 sample sites negative trend, smaller rate; 4 of 5 sample sites no trend	5 of 5 sample sites no trend
Dissolved Oxygen 10 Year 2007-2016	4 of 15 sample sites negative trend, smaller rate; 1 of 15 positive trend smaller rate; 10 of 15 sample sites no trend	5 of 5 sample sites no trend	1 of 5 sample sites positive trend smaller rate; 4 of 5 sample sites no trend	5 of 5 sample sites no trend	3 of 5 sample sites negative trend, smaller rate; 2 of 5 sample sites not trend	5 of 5 sample sites no trend

The statistical summary above corroborates the bay conditions assessment. All bays have nitrogen increases but some bays are better in terms of chlorophyll and dissolved oxygen – Sarasota Bay, Little Sarasota Bay and Lemon Bay. Again, there is no evidence of widespread increases in pollution discharges so this phenomenon is most likely a result of natural forces like rainfall or salinity. The graph below indicates that salinity appears to be declining in the bays.



Red Tide was present during much of 2016. Data from the Florida Fish and Wildlife Conservation Commission and Mote Marine Laboratory illustrates an abundance of red tide early and late in the year. Blooms are known to reduce dissolved oxygen concentrations, increase chlorophyll concentrations, and decaying fish release nutrients into the water. The chlorophyll data was examined and it was found that chlorophyll in the bays is generally higher in mid-year, which does not correspond with red tide blooms, so Karenia cannot explain the increased chlorophyll in the bays.



Red Tide Sampling Locations

Map published using ArcGIS 10.x by plooma on Wednesday, April 19, 2017

Path: N:\Environmental Water Quality\Sampling\Red Tide\SamplingLocations_8.5 x 11.mxd

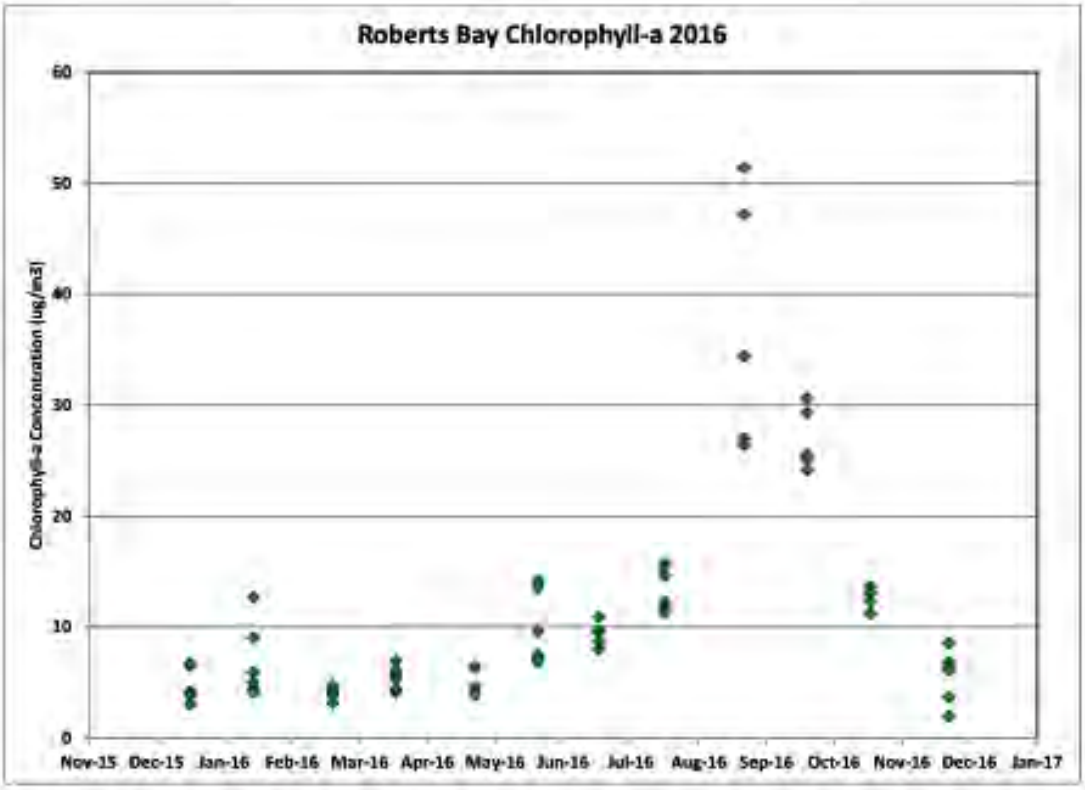
Sarasota County
scgov.net | 941.861.5000

Aerial Imagery Provided by Pictometry International
Sarasota County, FL
January 2016 6.6" Resolution
N.A.D. 1983 HARN State Plane Florida West FIPS 0902
(U.S. Survey Feet)

0 1.5 3 6 Miles

This map is produced from Sarasota County GIS, and is representative information only. The County does not warrantee, guarantee, or assume any responsibility for geographic information completeness and/or accuracy. This map should not be used as guide for navigation.

Copyright © SCGIS 2017



Relationship of Data to Stormwater Management Plan (SWMP)

The bay water quality monitoring program highlights which bays are relatively more impacted by pollutants. When coupled with other elements of the monitoring plan, the results point out where additional focus is needed for the update to the SWMP that will be submitted with the year four annual report. Monitoring data indicates that some negative trends have been found in bay water quality.

The nine elements of the SWMP have been successfully fulfilled since 1995. Capital projects such as the Celery Fields, Dona Bay Project, sediment sumps, the Catfish Creek Stormwater Facility, and the Briarwood Stormwater Treatment Facility reduce pollutant loading. Documentation for projects is on the Sarasota Water Atlas Projects Catalog Pages at http://www.sarasota.wateratlas.usf.edu/projects-catalog/. These pages are a work in progress and additional projects by the County, permit co-permittees, National Estuary Programs and others will be regularly added.

Sarasota County

Dona Bay
Watershed Restoration Program

OBJECTIVES

1. Provide a more natural freshwater/ saltwater regime in the tidal portions of Dona Bay.
2. Provide a more natural freshwater flow regime pattern for the Dona Bay watershed.
3. Protect existing and future property owners from flood damage.
4. Protect existing water quality.
5. Develop potential alternative surface water supply options that are consistent with and support other plan objectives.

Construction of Phase I Control Structure.

BACKGROUND

Comprehensive Watershed Management

The Dona Bay watershed has grown significantly over the past 100 years from a natural slough that meandered south and east toward the Myakka River to an engineered canal system. In the 1960s the United States Department of Agriculture's Natural Resource Conservation Service embarked on one of the most significant drainage projects in the history of Sarasota County. A large canal system with water level control structures was constructed from Shakett Creek, through Cow Pen Slough and north toward Manatee County. This canal system introduced excessive amounts of freshwater to Dona Bay and enlarged the watershed from 15 square miles to almost 75 square miles. Excess fresh water altered the salinity and brought increased nutrients that disrupted the estuary.

Estuaries need an appropriate mix of salt and fresh water for many species, including juvenile commercial and sportfish.

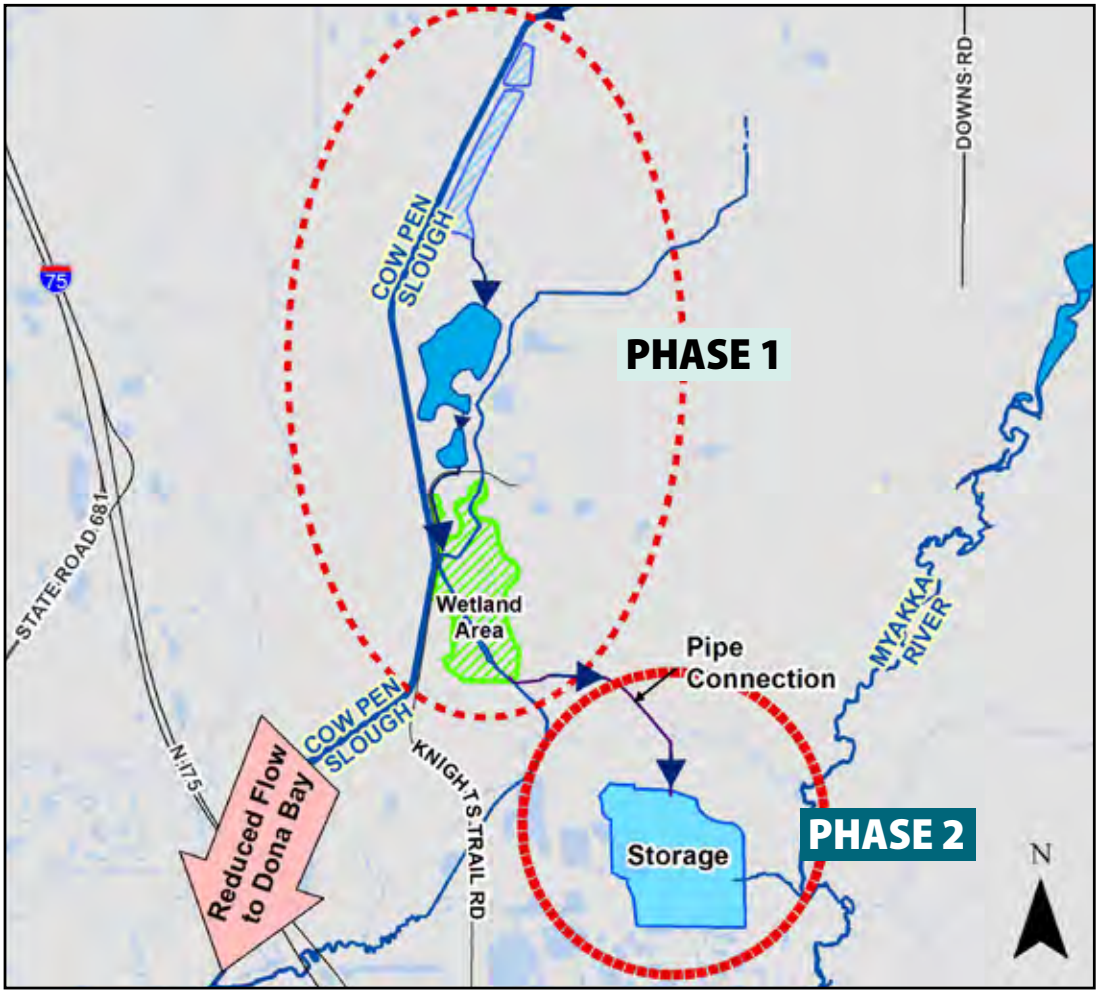
Sarasota County completed a watershed management plan for Dona Bay in 2007 that identified phased projects to restore the natural systems.

PHASING AND STATUS

In 2015, through cooperative funding from the Southwest Florida Water Management District and state appropriations, Sarasota County began construction of the first phase of a series of projects that will meet the watershed management plan objectives. Future phases will be implemented as funding becomes available to restore Dona Bay back to a healthy estuary.

PHASE	IMPROVEMENTS	WATERSHED BENEFITS	COST	SCHEDULE
1	150-acre wetland enhancement by diverting Cow Pen Slough through a new control structure; 1,000-acre storage creation.	Reintroduces historic floodplain; helps to restore natural fresh/saltwater flow regime in Dona Bay; removes 18,000 pounds of nitrogen annually.	$12 million*	Construction began in summer 2015 and will be complete in spring 2017.
2	Divert water to restore some historic flow to the Myakka River. Construct pipeline and reinforce a 380-acre storage facility.	More natural flow regime in Dona Bay by diverting water to the Myakka River; moves towards balancing fresh/saltwater mix; flood protection; removes an additional 7,000 pounds of nitrogen per year.	$8 million	90 percent design and permitting complete in January 2017; construction start fall 2017.
3	Investigate alternative water supply options such as aquifer storage or using excess Cow Pen Slough water.	Decrease fresh water going into Dona Bay; improve salinity and water quality in the estuary.	$6.7 million	Planning, design, permitting January 2017 – September 2019, construction October 2019 – October 2021.
4	Replacement/reconfiguration of the Kingsgate Weir.	Increases ability to control wet season timing and volumes of fresh water entering the estuary.	$2 million	TBD
5	Blackburn Canal Project	Further reduces excess fresh water to the estuary.	$2 million	TBD
6	Habitat Restoration	Oyster, seagrass and wetland restoration and monitoring.	$2 million	TBD

*Cooperatively funded by Sarasota County, Southwest Florida Water Management District, and Florida Department of Environmental Protection.



For more information,
call **941-861-5000**
or visit **www.scgov.net**
(keywords Dona Bay)

Sarasota County
scgov.net | 941.861.5000

CD/1.17

Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

2. Ambient Water Quality of Watersheds

Ambient Water Quality of Watersheds
Reporting and Assessment of Monitoring Results

Creeks receive stormwater from the watersheds and transport it to the bays. Healthy creeks are nurseries for fisheries and other aquatic life, they add to the human quality of life, and support local property values. Nutrients, bacteria, sediments, and oxygen-demanding substances have been identified as priority pollutants.

Summary of Monitoring Data from 2016 Reporting Year

Data is summarized on the Sarasota Water Atlas website on the Creek Conditions Pages and the new Water Quality Trends Pages. Data can also be downloaded.

Long Term Assessment

Seventeen Creeks were assessed for Creek Conditions using chlorophyll, nitrogen, phosphorus, and dissolved oxygen data and the information is available at (http://www.sarasota.wateratlas.usf.edu/creek-conditions/). The data shows notable differences among creeks with 7 creeks with perfect or excellent grades contrasted with 4 that have a preponderance of Caution grades. The timeline below suggests negative trends for Alligator, Phillippi and Gottfried Creeks, and positive trends for Forked, Hudson, Whitaker, and Phillippi.

Creek Conditions	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2011	Pass	Caution	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
2012	Caution	Caution	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Caution	Pass
2013	Caution	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Pass	Caution	Pass
2014	Caution	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass
2015	Pass	Pass	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Caution	Pass	Caution	Caution	Caution	Caution	Pass
2016	Pass	Pass	Caution	Pass	Caution	Caution	Caution	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass

Chlorophyll	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2011	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Pass	Pass
2012	Caution	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass
2013	Caution	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
2014	Caution	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
2015	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass
2016	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass

Nitrogen	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2011	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
2012	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2013	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2014	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass
2015	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass
2016	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Pass	Caution	Pass

Phosphorus	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2011	Pass	Caution	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2012	Pass	Caution	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2013	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2014	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2015	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass
2016	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Caution	Pass

Dissolved Oxygen	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
2011	Pass	Caution	Pass	Pass	Pass	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
2012	Caution	Caution	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Caution	Caution	Caution	Pass	Caution	Pass
2013	Caution	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Pass
2014	Pass	Pass	Caution	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Caution	Caution	Caution	Pass
2015	Pass	Pass	Pass	Pass	Caution	Caution	Pass	Caution	Pass	Pass	Caution	Pass	Caution	Caution	Caution	Caution	Pass
2016	Pass	Pass	Caution	Pass	Pass	Caution	Pass	Caution	Pass	Pass	Pass	Pass	Caution	Pass	Caution	Caution	Pass
Pass/Fail	5/24	4/24	3/24	0/24	10/24	6/24	2/24	9/24	0/24	0/24	2/24	1/24	11/24	4/24	6/24	16/24	0/24

The Creek Conditions pages also provide five year trend graphs for dissolved oxygen, rainfall, and salinity for fresh and marine reaches plus impervious surface and land use characteristics for each basin. These graphs appear to show salinity changes in some creeks. Dissolved oxygen apparently declined in five creeks and rose in two others.

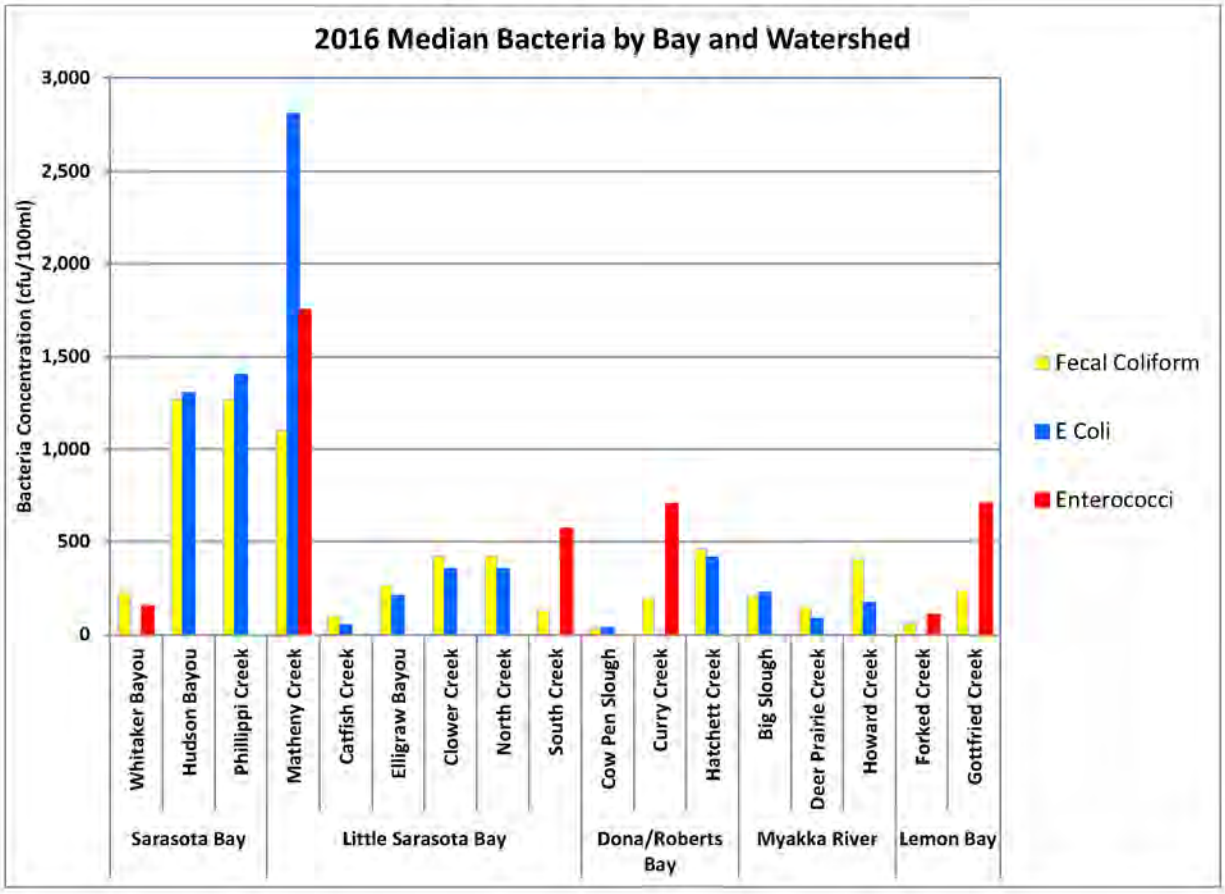
2016		Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
Freshwater Portion of the Creek	Dissolved Oxygen Saturation	Flat	Flat	Down	Flat	No Data	No Data	Flat	No Data	Down	Flat	Down	Down	Flat	No Data	No Data	Flat	No Data
	Salinity	Flat	Flat	Down	Up	No Data	No Data	Flat	No Data	Up	Flat	Flat	Flat	Flat	No Data	No Data	Up	No Data
	Turbidity	Down	Down	Up	Flat	No Data	No Data	Down	No Data	Up	Flat	Down	Flat	Up	No Data	No Data	Flat	No Data
Tidal Portion of the Creek	Dissolved Oxygen	Down	No Data	Down	No Data	Up	Flat	Up	Flat	No Data	No Data	No Data	No Data	Flat	Flat	Down	Flat	No Data
	Salinity	Flat	No Data	Down	No Data	Down	Flat	Flat	Flat	No Data	No Data	No Data	No Data	Down	Flat	Flat	Flat	Flat
	Turbidity	Flat	No Data	Flat	No Data	Flat	Flat	Flat	Flat	No Data	No Data	No Data	No Data	Flat	Flat	Flat	Flat	Flat
Basin Qualities	Impervious Surface Coverage 2013	27%	46%	20%	35%	30%	52%	24%	14%	6%	2%	12%	27%	23%	21%	6%	7%	1%
	Urban Land Use in Basin 2011	80%	94%	73%	92%	86%	77%	68%	73%	20%	25%	57%	73%	71%	81%	37%	29%	28%
	Basin Acreage	4,967	2,406	35,771	1,724	473	284	3,984	2,327	12,630	47,518	6,399	3,342	6,789	1,475	5,863	7,209	6,366
		This is just a visual assessment, not a statistical trend test, and is intended to provide an sense of changes to water quality conditions.																

Statistically significant trend analysis for Nitrogen, Chlorophyll-a, and Dissolved Oxygen for both the period of record (POR) and the preceding 10 years is on the Sarasota Water Atlas at (http://www.sarasota.wateratlas.usf.edu/water-quality-trends/). Each station is characterized as no trend, or positive or negative trends at a smaller rate or larger rate.

	Whitaker Bayou	Hudson Bayou	Phillippi Creek	Matheny Creek	Elligraw Bayou	Clower Creek	Catfish Creek	North Creek	South Creek	Cowpen Slough	Curry Creek	Hatchett Creek	Alligator Creek	Woodmere Creek	Forked Creek	Gottfried Creek	Ainger Creek
Total Nitrogen Period of Record 1998-2016	2 of 2 sample sites negative trend, smaller rate	2 of 2 sample sites negative trend, smaller rate	7 of 8 sample sites negative trend, smaller rate; 1 no trend	2 of 2 sample sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	1 of 1 samples sites no trend	2 of 2 samples sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	2 of 2 samples sites negative trend, smaller rate	2 of 2 samples sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	1 sample site negative trend smaller rate; 1 no trend; 1 negative	2 of 2 samples sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	2 of 2 samples sites negative trend, smaller rate	No Data
Total Nitrogen 10 Year 2007-2016	2 of 2 sample sites negative trend, smaller rate	2 of 2 sample sites negative trend, smaller rate	7 of 8 sample sites negative trend, smaller rate; 1 no trend	2 of 2 sample sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	1 of 1 samples sites no trend	2 of 2 samples sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	2 of 2 samples sites negative trend, smaller rate	2 of 2 samples sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	1 sample site negative trend smaller rate; 1 no trend; 1 negative	2 of 2 samples sites negative trend, smaller rate	1 of 1 sample sites negative trend, smaller rate	2 of 2 samples sites negative trend, smaller rate	No Data
Chlorophyll-A Period of Record 1998-2016	1 of 2 sample sites negative trend, smaller rate; 1 no trend	1 of 2 sample sites positive trend, smaller rate; 1 no trend	8 of 8 sample sites no trend	1 of 2 sample sites negative trend smaller rate; 1 no trend	1 of 1 sample sites positive trend, smaller rate	1 of 1 sample sites no trend	1 of 2 sample sites positive trend smaller rate; 1 no trend	1 of 1 sample sites no trend	1 of 1 sample sites negative trend, smaller rate	1 of 2 samples sites positive trend, smaller rate; 1 no trend	2 of 2 samples sites no trend	1 of 1 sample sites no trend	1 of 3 sample sites positive trend smaller rate; 2 no trend	1 of 2 sample sites positive trend smaller rate; 1 no trend	1 of 1 sample sites no trend	1 of 2 sample sites positive trend, larger rate; 1 no trend	No Data
Chlorophyll-A 10 Year 2007-2016	1 of 2 sample sites negative trend, smaller rate; 1 no trend	1 of 2 sample sites positive trend, smaller rate; 1 no trend	8 of 8 sample sites no trend	1 of 2 sample sites negative trend smaller rate; 1 no trend	1 of 1 sample sites positive trend, smaller rate	1 of 1 sample sites no trend	1 of 2 sample sites positive trend smaller rate; 1 no trend	1 of 1 sample sites no trend	1 of 1 sample sites negative trend, smaller rate	1 of 2 samples sites positive trend, larger rate; 1 no trend	2 of 2 samples sites no trend	1 of 1 sample sites no trend	1 of 3 sample sites positive trend smaller rate; 2 no trend	1 of 2 sample sites positive trend smaller rate; 1 no trend	1 of 1 sample sites no trend	1 of 2 sample sites positive trend, larger rate; 1 no trend	No Data
Dissolved Oxygen Period of Record 1998-2016	2 of 2 sample sites no trend	1 of 2 sample sites positive trend, smaller rate; 1 no trend	7 of 8 sample sites no trend; 1 negative trend smaller rate	2 of 2 sample sites no trend	1 of 1 samples sites no trend	1 of 1 samples sites positive trend smaller rate	1 of 2 sample sites negative trend smaller rate; 1 no trend	1 of 1 sample sites no trend	1 of 1 sample sites no trend	2 of 2 samples sites no trend	2 of 2 samples sites no trend	1 of 1 sample sites positive trend, smaller rate	1 of 3 sample sites positive trend smaller rate; 2 no trend	1 of 2 sample sites positive trend smaller rate; 1 no trend	1 of 1 sample sites negative trend, smaller rate	2 of 2 samples sites positive trend, smaller rate	No Data
Dissolved Oxygen 10 Year 2007-2016	2 of 2 sample sites no trend	1 of 2 sample sites positive trend, smaller rate; 1 no trend	2 of 8 sample s sites negative trend smaller rate; 1 positive trend smaller rate, 5 no trend	2 of 2 sample sites no trend	1 of 1 samples sites no trend	1 of 1 samples sites positive trend smaller rate	1 of 2 sample sites negative trend smaller rate; 1 no trend	1 of 1 sample sites no trend	1 of 1 sample sites no trend	2 of 2 samples sites no trend	2 of 2 samples sites no trend	1 of 1 sample sites positive trend smaller rate	1 of 3 sample sites positive trend smaller rate; 2 no trend	1 of 2 sample sites positive trend smaller rate; 1 no trend	1 of 1 sample sites negative trend, smaller rate	2 of 2 samples sites positive trend, smaller rate	No Data

The graph above shows that nitrogen increases in the creeks are common except for Clower Creek. The majority of creeks (7) showed chlorophyll decreases, with 6 unchanged, and increases found in 3 creeks - Whitaker, Matheny and South Creek. Dissolved oxygen was static in 7 creeks, improving in 5 and declining in 3 – Phillippi, Catfish and Forked. There are no known pollution sources that increased in every basin of the County so it is thought that the increasing nitrogen levels may be related to atmospheric deposition or are somehow rainfall related.

Bacteria data was graphed by basin (below). Problem areas with high values (Matheny, Phillippi and Hudson) are in contrast to areas with low values (Catfish, Cowpen, Deer Prairie, and Forked).



Relationship of Data to Stormwater Management Plan

The results of comprehensive creek monitoring highlights the problem areas that are suitable for further investigation. Data suggests that negative trends for Alligator, Phillippi and Gottfried Creeks may be suitable for additional pollutant removal measures to be incorporated into the Stormwater Management Plan in the year four annual report.

Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

3. Biological Monitoring - Oysters

2016 Biological Monitoring – Oyster Monitoring
Reporting and Assessment of Monitoring Results

Oysters have long been recognized as key bio-indicators of the ecological health of marine and estuarine ecosystems. Changes in oyster health can provide an early warning of potential adverse impacts associated with hydrological alterations occurring throughout the watershed. Monitoring the changes in percent live oyster coverage is a simple, cost-effective tool to document changes and allow watershed managers to minimize impacts.

Summary of Monitoring Data from 2016 Reporting Year

In 2016 fourteen stations ranked excellent with greater than 75% live oysters. Eight stations fell into the "good" category (50%-75% live oysters). Two stations were in the caution category with less than 50% live

Below is the current and historic percent live oyster monitoring data.

Percent Live Oysters by Year
Excellent (>75%), **Good** (50-75%), **Caution** (<50%)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AL1					63	68	61	62	69		43	49	65	**81**
AL2					78	84	66	69	80		21	49	73	**49**
ANG1					75	75	46	80	79		75	74	72	**80**
ANG2					85	72	55	80	72		52	85	73	76
CAT1				76	88	94	70	2	0		0			
CC1	0	41	59	59	71	80	68	76	71	61	61	68	45	53
CC2			13	51	74	91	47	59	77	55	21	33	38	35
DB1	22	58	76	64	73	77	67	84	82	74	77	71	79	70
FRK1					64	50	36	48	33		0	84	81	82
FRK1A											44			
FRK2					77	79	69	73	85		72	86	85	87
GOT1					72	75	68	84	84		80	72	86	80
GOT2					79	70	63	70	76		46	79	75	78
GOT3					81	55	55	64	60		69	75	55	64
HUD1				78	75	77	71	79	87		59	85	87	88
HUD2				54	66	63	67	67	70		68	71	63	70
LYB1	80	79	80	77	63	71	78	74	73	75	68	83	84	77
NC1				82	76	69	77	77	85		82			
NC2				0	85	47	59	50	0		0			
NC2A											72			
NO1												86	85	81
PH1				56	76	54	77	78	77		72	56	79	85

Percent Live Oysters by Year
Excellent (>75%), **Good** (50-75%), **Caution** (<50%)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
PH2				60	81	75	72	78	80		67	64	83	88
PH3				21	84	75	66	70	46		23	68	67	55
RB1	79	78	73	73	76	79	80	83	89	87	80	86	77	74
SC1				57	54	62	64	78	80		69	56	67	82
SC2	0			58	85	78	68	73	80		66	75	62	69
SKC1	8	79	89	72	86	82	82				86	78	88	83
SKC2		76	55	56	80	81	81	84	81	78	62	87	65	74
SKC3			36	37	16									

Long Term Assessment

Most oyster stations on Sarasota County creeks followed typical patterns that they have through the years. Some of the upstream stations experienced some die off during the wet season. Sarasota County did experience higher than average rainfall in August 2016. This higher than normal rainfall likely contributed to upstream stations being too fresh for too long causing some oyster die off. This is particularly evident in the Shakett Creek and Dona Bay watershed. This watershed is highly altered and upstream sites have experienced die off in the past during heavy rainfall years.

Relationship of Data to Stormwater Management Plan (SWMP)

The percent live oysters generally drop in the wet season and in certain watersheds with excessive runoff, the die off in up-stream stations is more pronounced. This allows the county to identify areas in which to focus water retention efforts.

A recent watershed restoration effort was completed during the winter of 2016-1017 in the Dona Bay watershed. It is anticipated that upstream die offs in the Dona Bay watershed will decrease in the future due to restoration efforts.

Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

4. Biological Monitoring - Seagrass

Biological Monitoring – Seagrass Monitoring
Reporting and Assessment of Monitoring Results

Seagrass is the response variable that was used to develop nutrient management criteria for bays in Southwest Florida. The SW Florida Water Management District maps seagrass from aerial photography every other winter. Results from 2016 show an overall increase in seagrass throughout Sarasota County but increases in Sarasota, Roberts and Dona/Roberts Bays were offset by losses in Little Sarasota, Blackburn and Lemon Bays. This data is for Sarasota County only and does not include the portions of Sarasota and Lemon Bay that are beyond the County borders.

Year	*Sarasota Bay*	*Roberts Bay*	*Little Sarasota Bay*	*Blackburn Bay*	*Dona Roberts Bay*	*Lemon Bay*
2014	3,479	321	884	461	99	1,354
2016	3,719	356	772	415	101	1,340

Summary of Monitoring Data from 2016 Reporting Year

Sarasota County monitors the quality of seagrass by monitoring species, percent cover of the bay bottom (abundance), blade length, drift algae, epiphyte coverage and other characteristics. The premise is that healthy seagrass beds will grow densely, be climax species, and be tall. When extremely abundant, drift algae and epiphytes are known to be harmful to the health of seagrass. In 2016, 40 fixed and 130 random sites were sampled throughout all of the bays in Sarasota County.

Long Term Assessment

The SWFWMD Sarasota Bay Surface Water Improvement and Management Plan established that there is a negative correlation between nitrogen and seagrass biomass in Sarasota Bay (Tomasko et al., 1992).

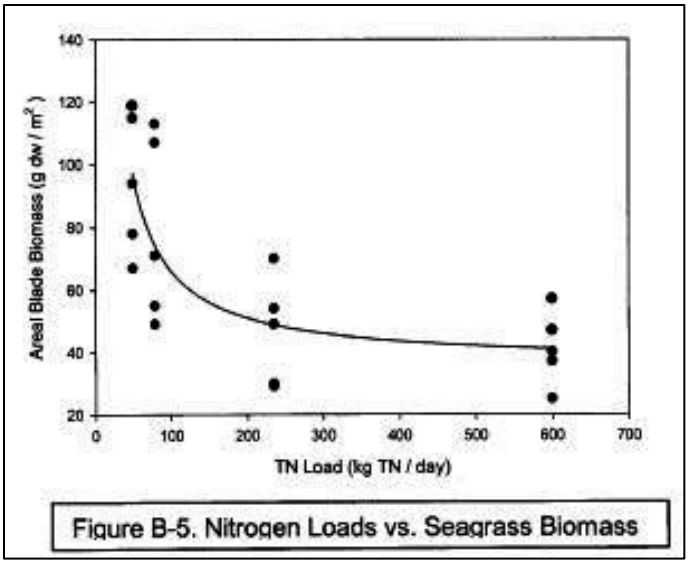
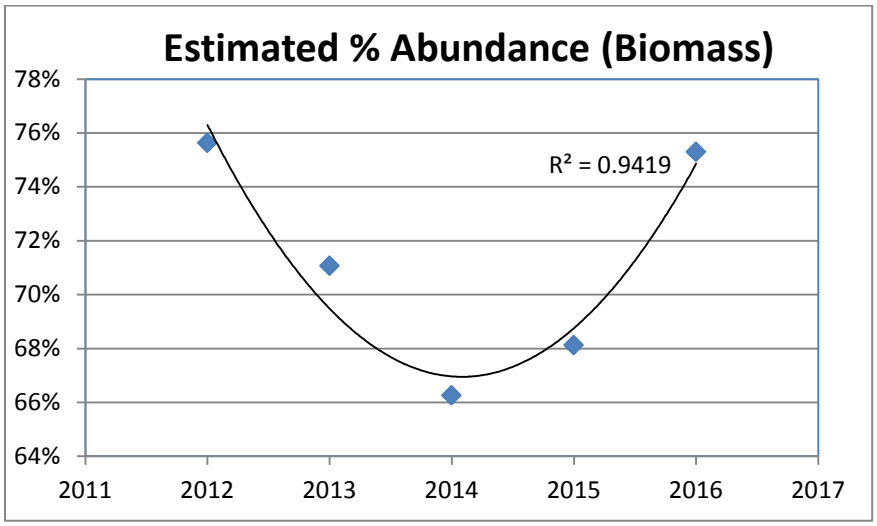


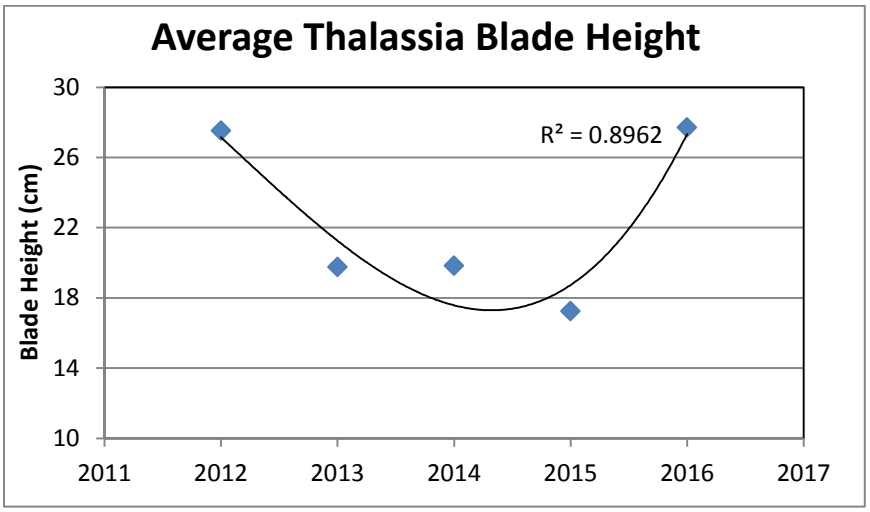
Figure B-5. Nitrogen Loads vs. Seagrass Biomass

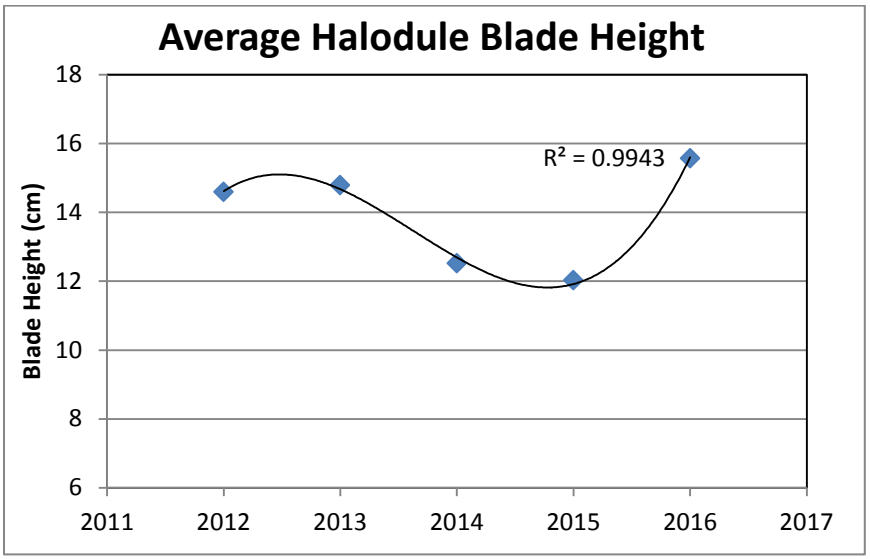
Five-year trends in the majority of the water bodies in Sarasota show evidence of an increase in nitrogen between 2013 and 2014. This correlates with the overall decline in biomass and robustness found by the Sarasota County Seagrass Monitoring Program in those years and subsequent recovery. 2013 demonstrates evidence of slightly higher than rainfall average which may also contribute to increased nitrogen levels.

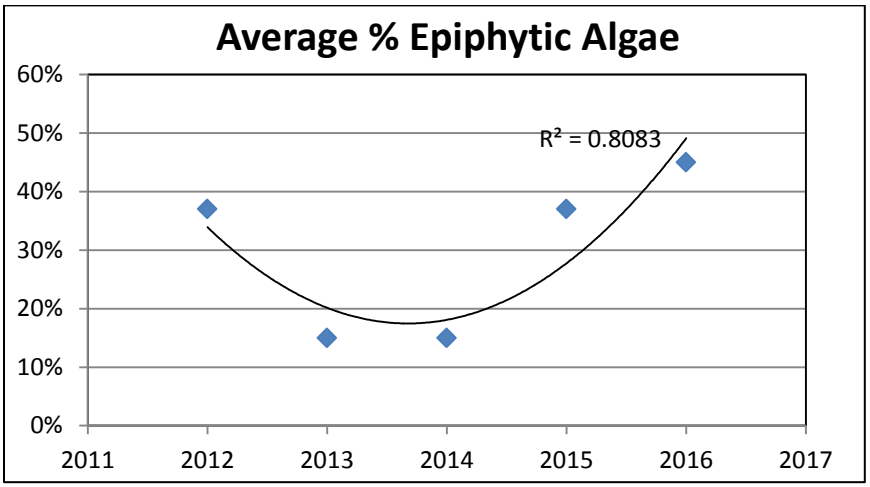
Year	Tot. Abundance	Avg. Thalassia Cover	Avg. Halodule Cover	Avg. Thalassia Blade Height (cm)	Avg. Halodule Blade Height (cm)	Avg. Drift Algae	Avg. Epiphytic Algae
2012	76%	74%	85%	27.52	14.59	6%	37%
2013	71%	70%	89%	19.76	14.78	23%	15%
2014	66%	62%	75%	19.83	12.52	18%	15%
2015	68%	65%	75%	17.23	12.03	18%	37%
2016	75%	58%	99%	27.71	15.57	10%	45%

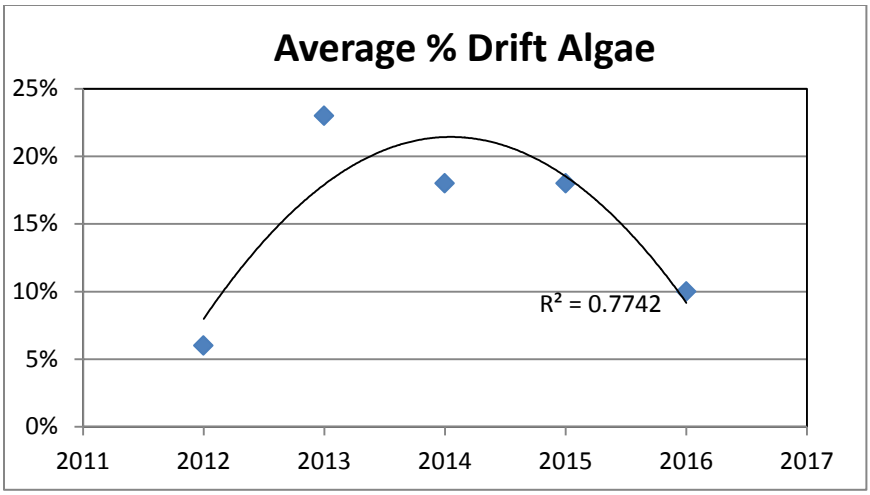
In 2016, increases were seen in abundance, blade length, and epiphytes; drift algae was down, as was the relative abundance of Thalassia. Halodule is a pioneer species and will recover more quickly than Thalassia which is a climax seagrass bed community. The mix of negative and positive characteristics may be analyzed spatially for each bay and bay segment and be correlated to water quality characteristics such as nitrogen and chlorophyll.

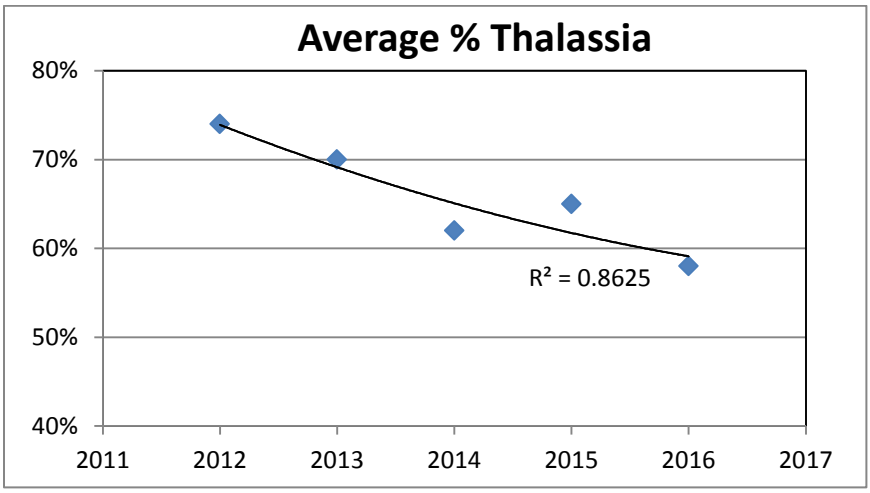


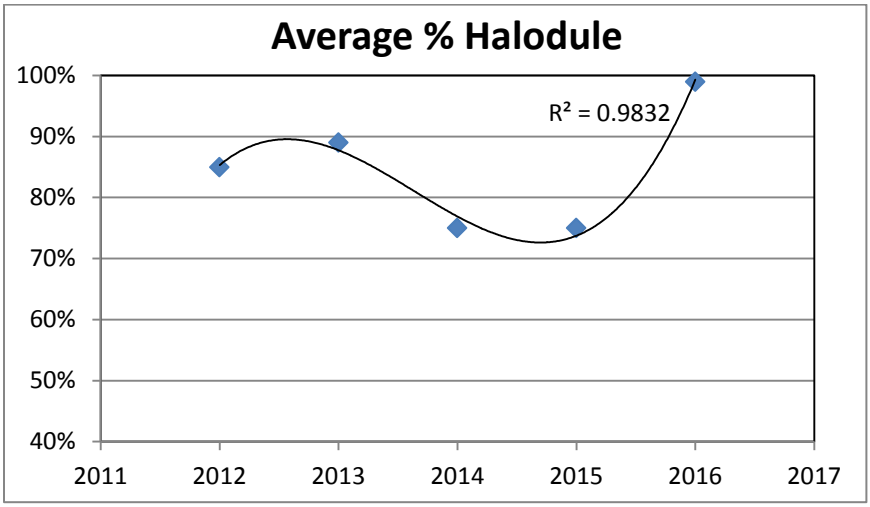

Average Thalassia Blade Height
Blade Height (cm)
30
26
22
18
14
10
2011
2012
2013
2014
2015
2016
2017
R² = 0.8962


Average Halodule Blade Height
Blade Height (cm)
18
16
14
12
10
8
6
2011
2012
2013
2014
2015
2016
2017
R² = 0.9943


Average % Epiphytic Algae
60%
50%
40%
30%
20%
10%
0%
2011
2012
2013
2014
2015
2016
2017
R² = 0.8083


Average % Drift Algae
25%
20%
15%
10%
5%
0%
2011
2012
2013
2014
2015
2016
2017
R² = 0.7742


Average % Thalassia
80%
70%
60%
50%
40%
2011
2012
2013
2014
2015
2016
2017
R² = 0.8625


Average % Halodule
100%
90%
80%
70%
60%
50%
40%
2011
2012
2013
2014
2015
2016
2017
R² = 0.9832

Relationship of Data to Stormwater Management Plan (SWMP)

The County Seagrass Monitoring Program does not just measure the presence of seagrass but also measures the health of seagrass. Note that Halodule is about 60% as tall as Thalassia so having climax species like Thalassia is beneficial as habitat, for sediment control and for grazing by manatees, turtles and other marine life. Seagrass species are sensitive to salinity so have an inherent relationship to stormwater management. It is expected that the Dona Bay Project, which was completed in 2017, will provide measurable benefits to seagrass in the downstream estuary by reducing salinity, color and nutrient levels in the bays.

Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

5. Biological Monitoring - Scallops

Scallop Monitoring Program
Reporting and Assessment of Monitoring Results

Since 2008, Sarasota County has been monitoring the scallop populations of our bays. The Scallop Program is part of a monitoring plan to help measure the effectiveness of the County's Stormwater Management Plan on our watersheds. The bay scallop (*Argopecten irradians)* is an indicator species that is particularly sensitive to freshwater influences and poor water quality. The county scallop monitoring program includes spat collection, adult surveys and survival rates of caged adults. These efforts are in partnership with the Florida Fish and Wildlife Research Institute (FWRI), Mote Marine Laboratory, and Sarasota Bay Watch.

<u>Summary of Monitoring Data from 2016 Reporting Year</u>

A. SPAT MONITORING

Figure 1: Monthly Scallop Spat Landings

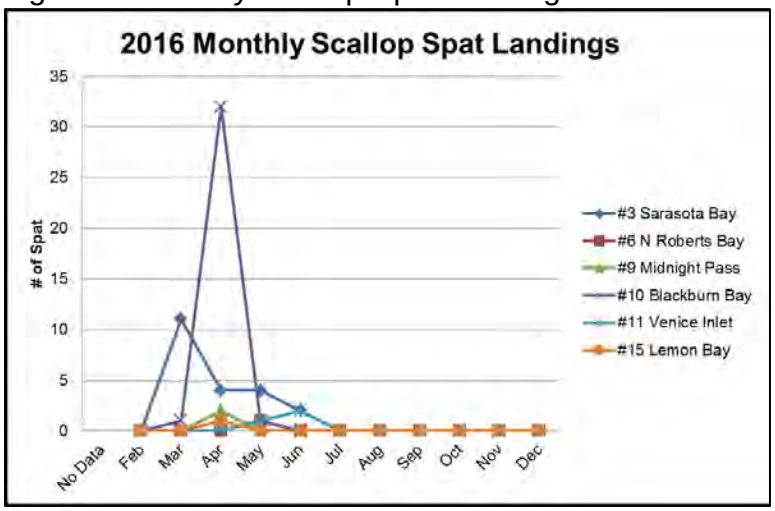
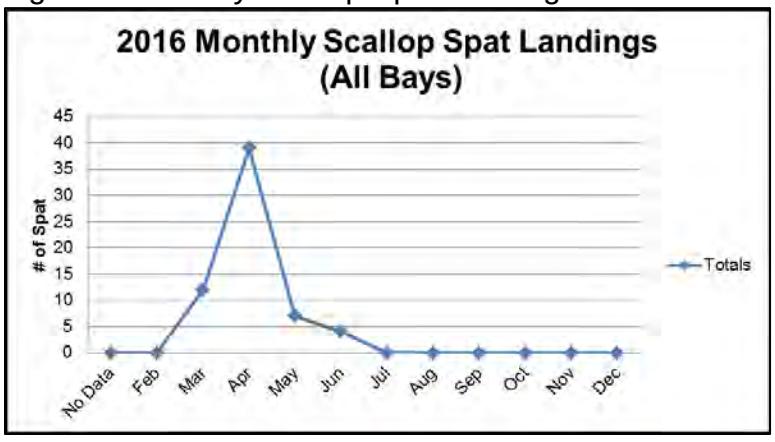
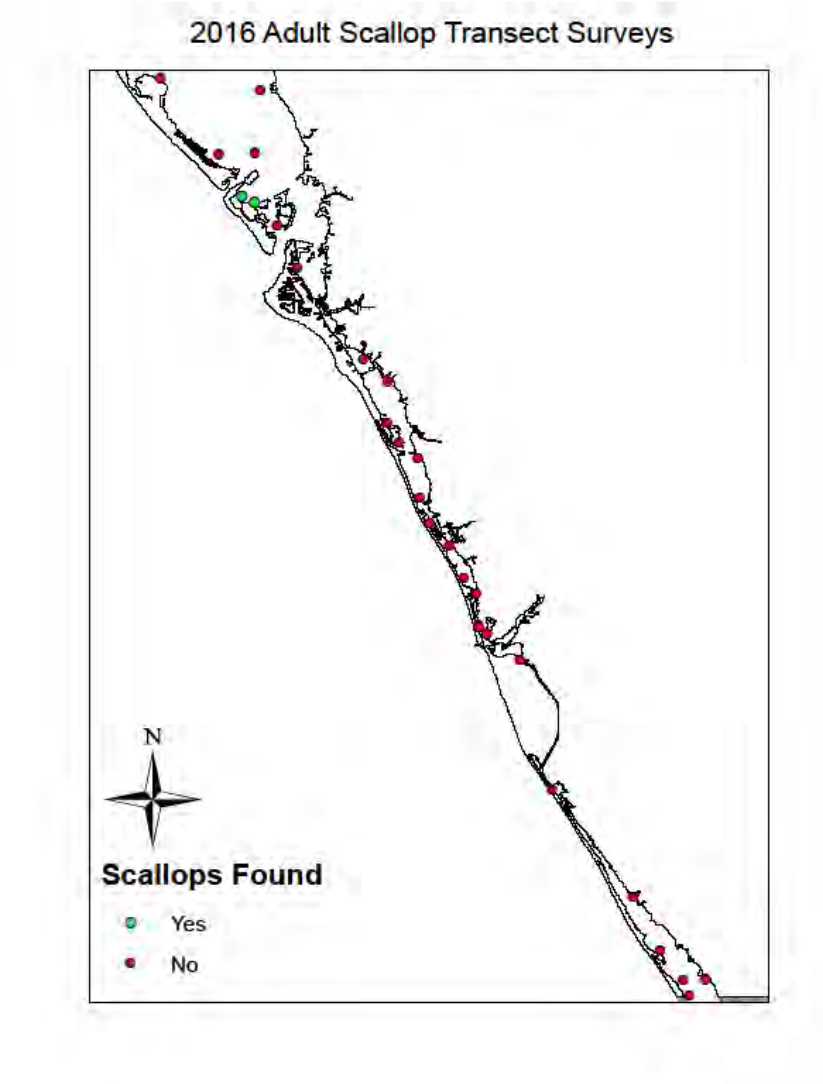


Figure 2: Monthly Scallop Spat Landings



Historical patterns in our spat monitoring program have consistently shown elevated landings from March through May with a peak occurring in April. The 2016 data shows a similar pattern (see figures 1 & 2). Significant countywide rainfall typically starts in June and remains persistent through September. The drop in spat landings follows the increasing rainfall patterns. This increase in fresh water causes decreases in salinity, which can have a negative effect on scallop populations.

B. ADULT SCALLOP TRANSECT SURVEY SITES



During the month of August staff, conducted 26 transect surveys throughout the county's bays searching for scallops. These surveys resulted in four live and eight recently dead scallops. No adult scallops were found during the 2015 survey.

C. CAGE PROGRAM

Figure 3: Caged Scallops Growth Rates

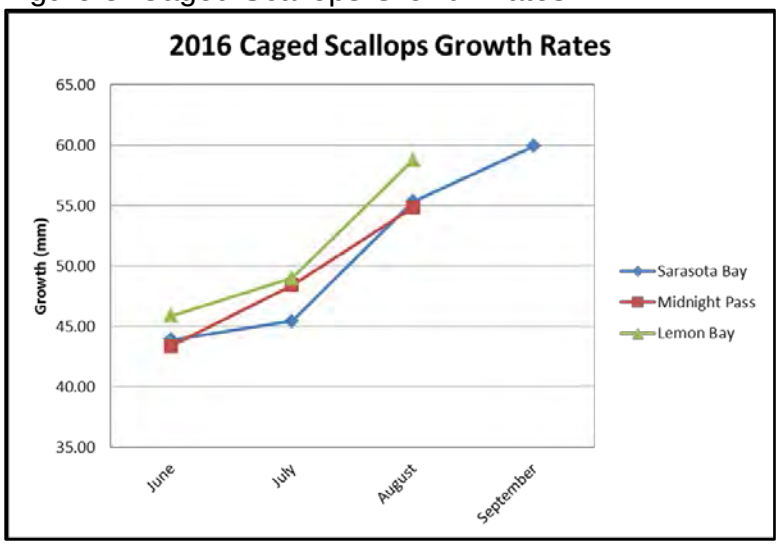
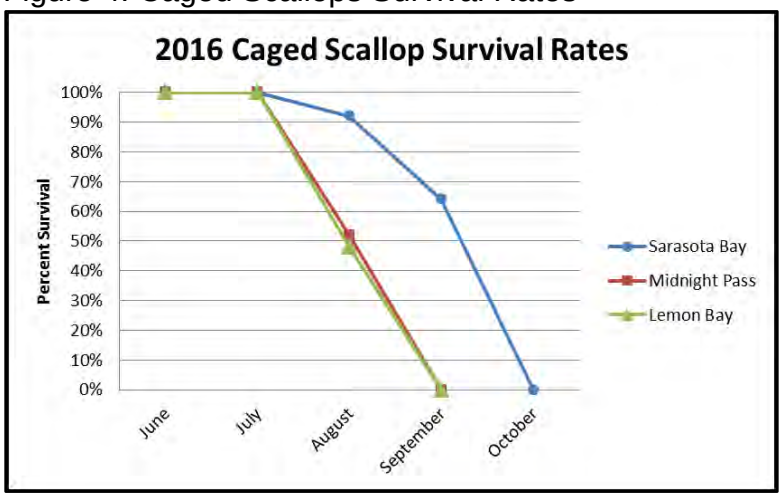


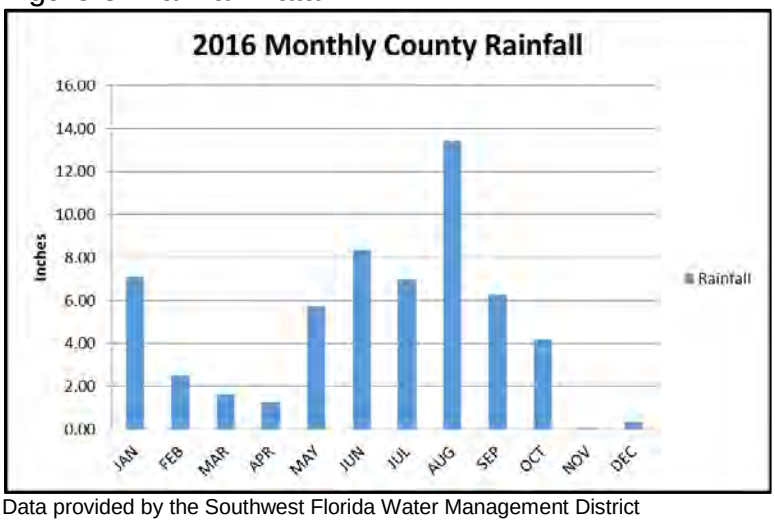
Figure 4: Caged Scallops Survival Rates



The county cage program relies on adult hatchery scallops provided by our partner organizations Mote Marine Laboratory & Sarasota Bay Watch. Scallops provided by our partners were placed at in cages three sites in county bays. The caged scallops experienced a normal growth rates June through August (See figure 3). A spike in redtide blooms during August resulted in significant mortality throughout the three cages (See figure 6). The bulk of the caged scallops did not survive through September.

D. RAINFALL

Figure 5: Rainfall Data

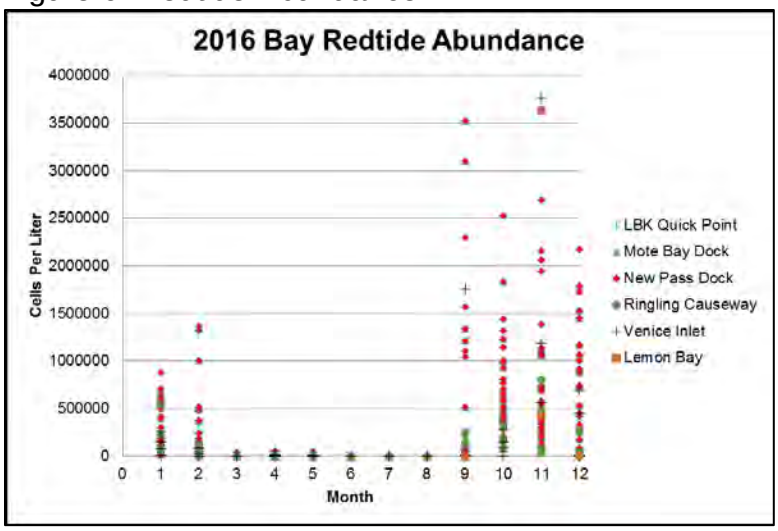


Data provided by the Southwest Florida Water Management District

The graph shows correlation between the typical peak of spat landings (see figure 2) and the decrease of rainfall leading into April (see figure 5). A similar correlation appears between the lack of adult scallops found during transect surveys and an increase in rainfall leading into a significant spike during the month of August.

E. REDTIDE

Figure 6: Redtide Abundance

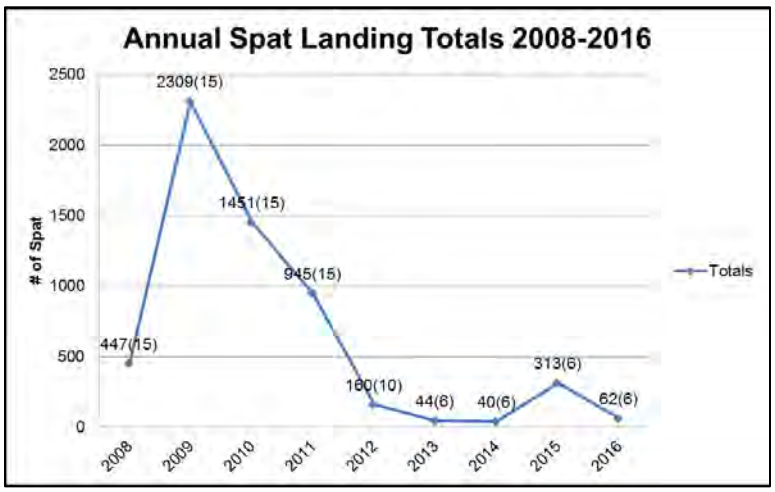


Data provided by FWRI

Redtide was present throughout most of the county's bays during nine months of the year. Red tide cell counts in excess of 1 million cells per liter are in the high range according the FWRI concentration scale. Samples showed medium to high cell counts in six of the nine months in which redtide blooms were present (See figure 6).

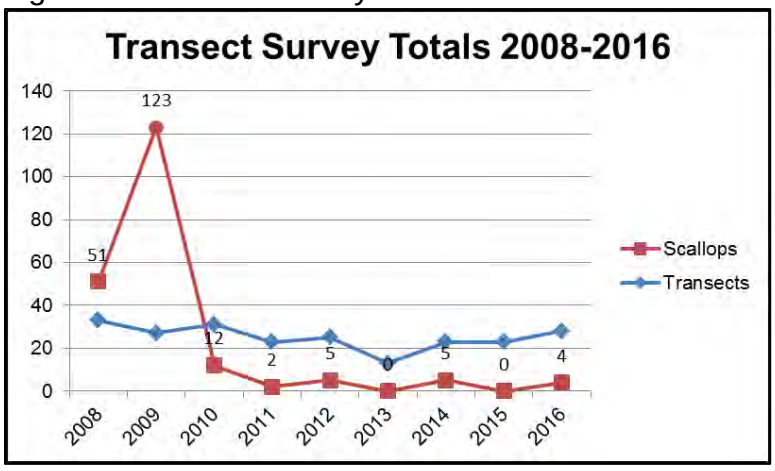
Long Term Assessment

Figure 7: Annual Scallop Spat Landings



The spat monitoring program started with (15) monitoring sites throughout the county bays. In 2012, Mote Marine Laboratory collaborated with county and the monitoring sites were reduced to (10) then further reduced to (6) in 2013. Figure 7 shows a decrease in 2016 spat landings of 19.8% from the 2015 data. However, this is roughly 30% above spat landing totals in 2013 and 2014.

Figure 8: Transect Survey Totals



After 2009, few adult scallops were found during the annual transect surveys. This trend in number of scallops found has continued from 2010 through 2016. This may indicate that a limited number of scallops remain in our natural background populations (see figure 8). Support for this conclusion is show by relatively low spat landings on our collectors during the same years (see figure 7). It is important to note that environmental factors such as visibility, number of locations surveyed and diver experience can have a significant influence the survey results.

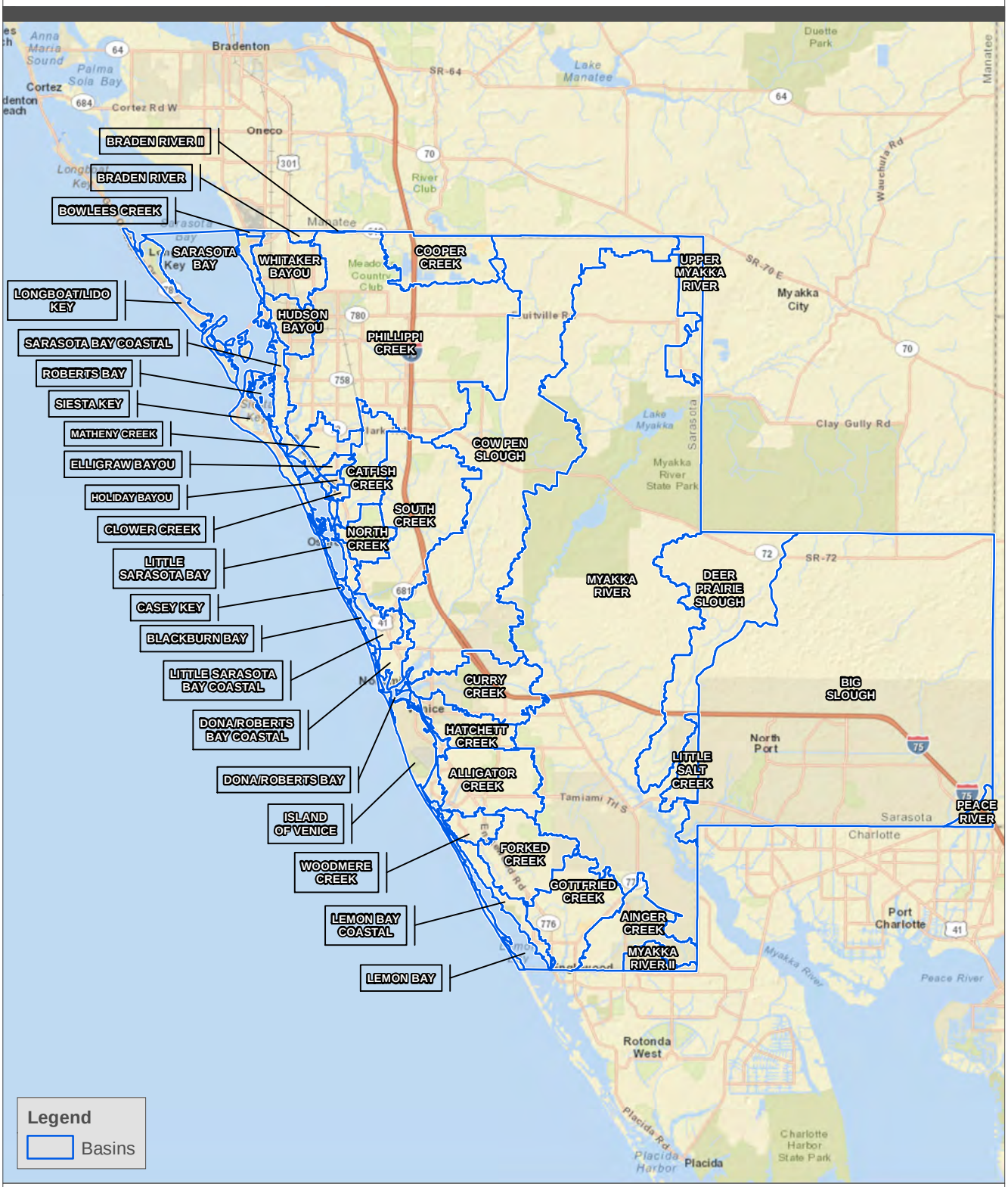
Relationship of Data to Stormwater Management Plan (SWMP)

Sarasota County continues to support watershed management projects that have a positive impact on the conditions of our bays. These structural controls remove pollutants before they reach the bay thereby protecting water quality. County bays continue to experience increasing seagrass acreage throughout our bays. Increased habitat for scallops is one part of complex environmental factors needed to support sustainable scallop populations. The county experienced concentrated rainfall events and persistent redtide blooms, each have shown to have a negative affect scallop populations. The data suggests that these factors may be the reason scallop monitoring sites throughout the county experienced 19.8% less spat landings than in 2015.

Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

6. Pollutant Load Modeling

SIMPLE Pollutant Loading Model Basins



For Informational Purposes Only Q:\19006_Sarasota\050_SIMPLE_Updates\mxd\SarasotaCountySubwatersheds.mxd SNyquist 4/12/2017

Pollutant Load Modeling
Reporting and Assessment of Monitoring Results

Modeling provides reasonable estimates of the sources of pollutants to a water body. Good models are internally consistent so provide a rational means for comparisons among a variety of conditions across a landscape.

Summary of Monitoring Data from 2016 Reporting Year

The SIMPLE Model was updated and run for the years 2001, 2006, 2011 and 2016, which corresponds to the last four periods when modeling was required by the NPDES MS4 permit, a year three requirement in each five year permit term. The model produces results for several modules: baseflow, direct runoff, irrigation, point source, atmospheric and septics and the results are totaled. Modeled parameters include nutrients, BOD, solids, metals, oil and bacteria. The entire County was modeled, including 43 areas, the major areas being drainage basins, but some are waterbodies and others are small fragments of basins at the edges of the County boundaries.

Long Term Assessment

The model results are tabular and voluminous. The following is an interpretation of the model results for Nitrogen for select drainage basins.

SIMPLE Pollutant Load Model Results
Examples from Select Basins for Nitrogen

Pounds per year		Nitrogen					
Basin	**Year**	**Baseflow**	**Direct Runoff**	**Irrigation**	**Point Source**	**Septic**	**TOTAL**
Alligator Creek	2001	11,177	31,768	2,644	31	24,838	70,458
	2006	11,324	32,166	2,737	30	26,096	72,353
	2011	11,431	32,401	2,740	53	26,181	72,808
	2016	11,431	32,401	2,940	54	25,447	72,275
Catfish Creek	2001	7,207	23,820	935	121	5,513	37,595
	2006	7,260	24,058	946	130	5,452	37,845
	2011	7,265	24,145	1,002	95	4,878	37,386
	2016	7,269	24,206	984	188	4,586	37,233
Gottfried Creek	2001	6,720	24,022	726	442	2,034	33,944
	2006	6,762	24,199	737	0	2,010	33,709
	2011	6,784	24,282	770	0	2,016	33,851
	2016	6,811	24,351	821	0	2,016	33,999
Cowpen Slough	2001	49,229	227,723	13,879	330	13,906	305067
	2006	49,357	227,794	14,014	328	14,581	306,073
	2011	49,443	228,526	14,014	282	11,209	303,473
	2016	48,816	227,379	14,014	291	10,337	300,836
Hudson Bayou	2001	4,893	19,990	1,372	11,203	1,500	38,960
	2006	4,893	19,990	1,370	0	1,563	27,817
	2011	4,893	19,990	1,370	533	858	27,645
	2016	4,893	19,990	1,370	2	830	27,086
Matheny Creek	2001	3,889	13,724	777	65	4,466	22,922
	2006	3,889	13,724	777	0	4,200	22,591
	2011	3,889	13,724	777	0	2,579	20,969
	2016	3,889	13,724	777	1	2,290	20,681
Phillippi Creek	2001	69,532	197,526	24,755	14,176	90,899	396,890
	2006	71,411	200,426	24,478	18,419	86,319	401,054
	2011	71,440	200,662	25,030	6,116	42,952	346,202
	2016	71,462	200,939	25,058	3,037	40,045	340,543
South Creek	2001	13,430	59,888	2,098	261	936	76,615
	2006	13,930	61,688	2,338	230	960	79,147
	2011	14,060	62,143	2,388	280	862	79,735
	2016	14,219	62,697	2,450	187	674	80,229

The bottom right corner of each basin group in the table is either green for reduced load or red for increased Total load. The contributing factors in the other columns are also color-coded, which illustrates which source is causing the total result. Generally speaking this table suggests improvements in wastewater treatment and septic system removal are offset by increases from stormwater loading probably from land development.

Relationship of Data to Stormwater Management Plan (SWMP)

SIMPLE is a spatial model which means that it can be used to look in detail at relatively small areas. Modeling is a strong tool for identifying portions of the watersheds that can be targeted for loading reductions or corrective actions with additional pollutant reduction measures.

The pending contract for upgrades to the Sarasota Water Atlas will include design and implementation of a Pollutant Load Modeling pages. This will provide transparency to the persons who are interested in having easy access to the model results.

The Sarasota Water Atlas also has Projects Catalog Pages that can be found at http://www.sarasota.wateratlas.usf.edu/projects-catalog/. New information is being added to these pages regularly. This project information is similar, and sometimes identical, to the load reductions found in the pollutant loading model.

Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

7. Rainfall

Rainfall Monitoring
Reporting and Assessment of Monitoring Results

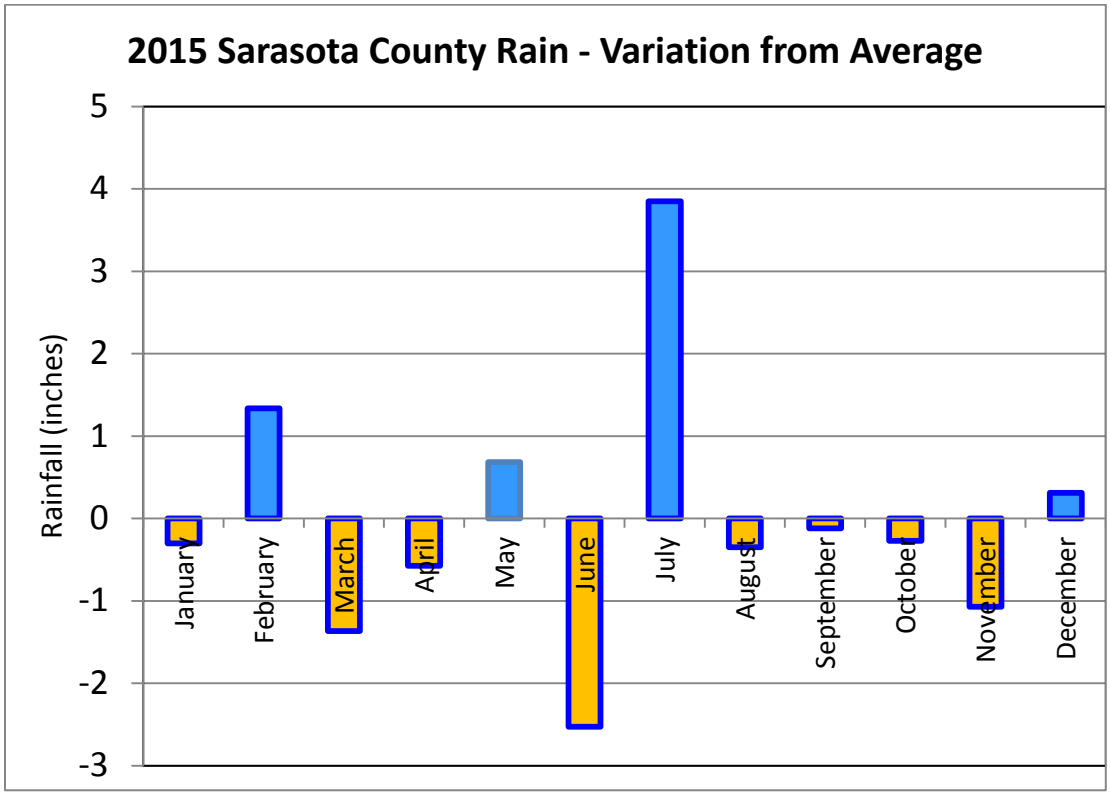
Rain is the driving force for stormwater pollution and plays an important role in other pollutant discharges such as septic systems and wastewater management. The amount and location of rain is not able to be managed but needs to be monitored and correlated to monitoring results.

Summary of Monitoring Data from 2016 Reporting Year

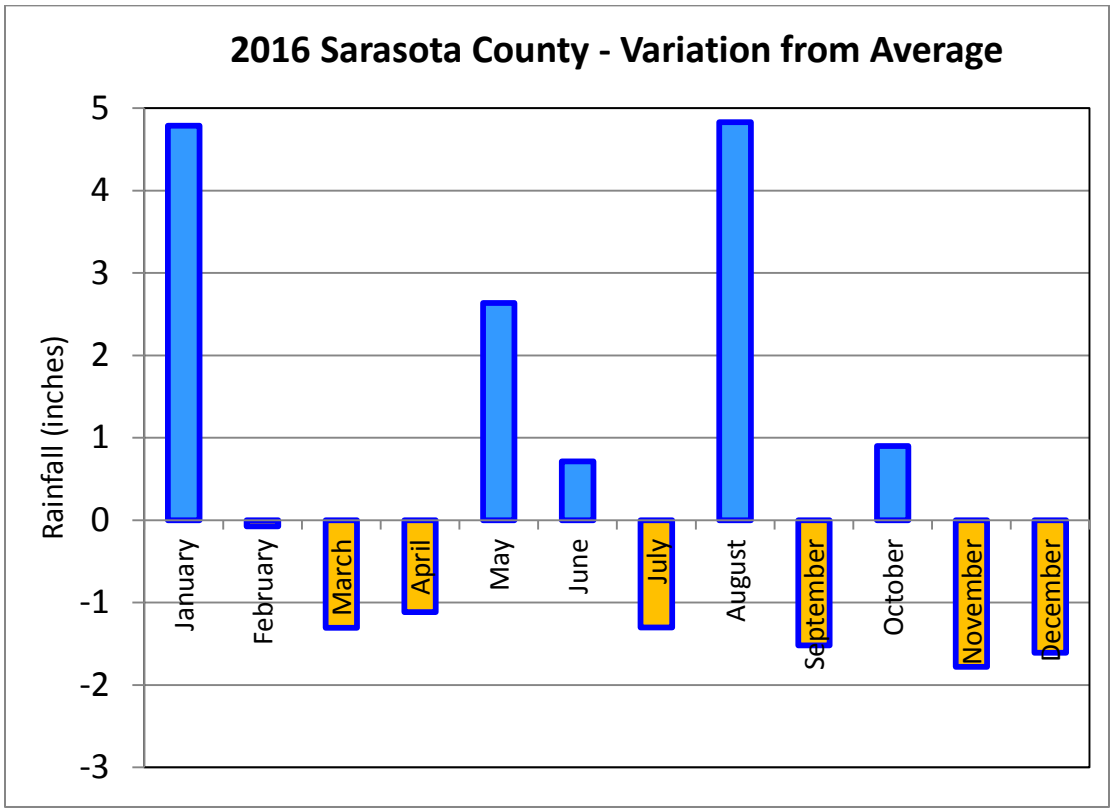
Three main sources of rainfall data are available. The SW Florida Water Management District has rain gauge data and radar-based rainfall. Sarasota County has the Automated Rainfall Monitoring System (ARMS) system. Radar data is available on the Water Atlas at http://www.sarasota.wateratlas.usf.edu/rainfall/. ARMS data is available at http://www.sarasota.wateratlas.usf.edu/datamapper/ and is also available with the data download function. District rain gauge data is available at http://www.swfwmd.state.fl.us/data/hydrologic/rainfall_data_summaries/

Long Term Assessment

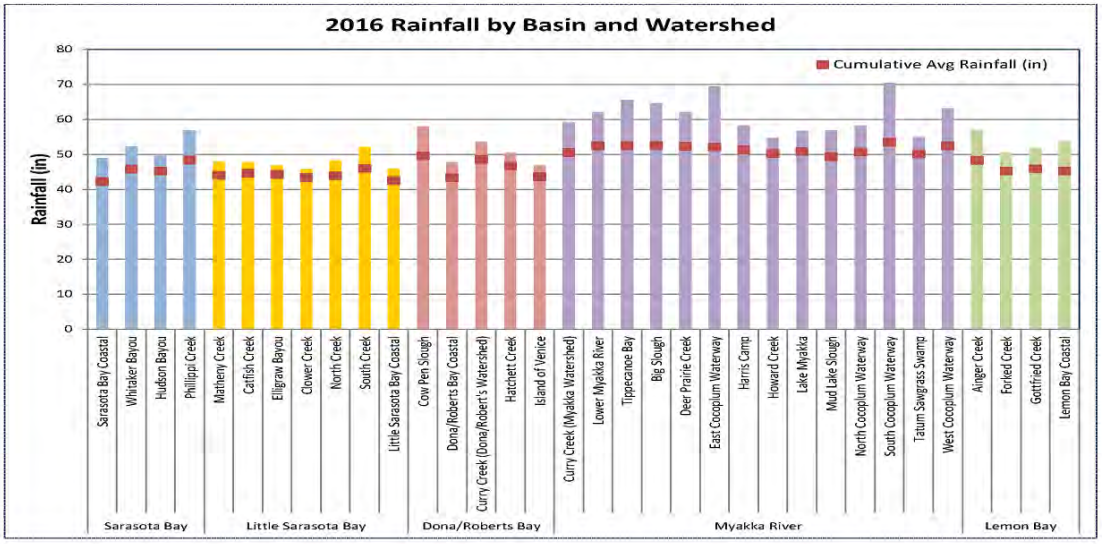
SWFWMD Rain Gauge Data: Average rainfall in Sarasota County is 52 inches per year. 2015 had above average rain (2.3 inches) but the latter part of the year was a dry spell and that may be pertinent to understanding conditions in 2016.



2016 also had above average rain (5.2 inches) primarily because of three heavy months. Six months were dry.



Radar Based Rain: More rain fell in the Myakka watershed than in the coastal watersheds and that relates directly to stormwater runoff and loading.



ARMS Rain: Tendency for more rain in the east and south. Rain is highly variable from month to month and from place to place.

Sarasota County Automated Rainfall Monitoring System 2016

Basin	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Whitaker Bayou	4.3	0.8	1.3	0.5	3.2	3.8	5.8	14.2	4.5	2.6	0.05	0.67	41.8
Hudson Bayou	5.6	2.0	2.0	0.5	4.5	10.2	4.3	11.8	4.4	2.5	0.03	0.29	48.1
Phillippi Creek	5.7	1.7	2.1	0.6	5.3	7.7	7.0	13.6	6.8	3.2	0.03	0.42	54.2
Matheny Creek	6.5	1.8	3.3	0.5	6.0	4.8	3.4	12.5	4.6	3.8	0.05	0.38	47.5
Holiday Bayou	6.8	2.1	2.5	0.9	2.7	1.9	2.7	13.5	4.0	3.4	0.03	0.34	41.1
Elligraw Bayou	5.9	2.0	2.7	0.7	6.9	4.9	2.7	13.7	4.4	3.2	0.06	0.40	47.5
Catfish Creek	5.5	1.6	2.0	1.4	6.2	5.0	3.2	13.5	2.9	1.9	0.03	0.33	43.4
North Creek	6.7	2.1	1.8	1.7	5.2	5.4	3.7	10.9	2.2	5.3	0.04	0.44	45.4
South Creek	6.0	2.3	1.1	2.3	5.3	5.4	4.0	12.7	2.9	2.6	0.03	0.48	45.1
Cowpen Slough	6.9	2.4	1.6	0.8	6.6	7.3	7.2	13.6	7.3	2.3	0.08	0.50	56.5
Hatchett Creek	7.9	2.7	2.5	1.2	5.2	4.8	2.1	11.3	3.0	2.8	0.00	0.14	43.6
Curry Creek	7.8	2.6	2.5	0.9	6.8	7.2	7.0	11.9	6.0	4.0	0.07	0.17	56.9
Alligator Creek	8.1	3.0	2.4	0.8	6.5	6.1	6.9	7.8	5.0	4.0	0.11	0.14	50.7
Woodmere Creek	8.3	3.1	2.4	1.2	4.8	4.4	7.9	8.8	4.5	3.1	0.13	0.09	48.7
Forked Creek	6.7	2.8	2.9	1.1	3.6	4.6	6.3	9.9	1.5	5.0	0.15	0.04	44.4
Gottfried Creek	8.6	3.4	2.1	0.8	2.9	6.6	5.8	11.3	4.2	3.9	0.16	0.12	50.0
Myakka River	6.6	1.7	1.3	0.6	7.7	8.3	6.7	11.4	5.0	4.1	0.08	0.64	54.2
Deer Prairie Creek	8.2	2.2	1.7	1.2	5.8	8.9	5.6	11.7	5.6	4.6	0.04	0.16	55.7
Little Salt Creek	7.4	3.6	2.2	1.9	5.1	11.7	7.5	10.7	5.8	4.4	0.11	0.05	61.3
Big Slough	6.6	3.2	1.8	1.4	3.8	8.1	5.1	12.1	6.2	3.1	0.13	0.11	51.6
Average	6.8	2.4	2.1	1.0	5.2	6.3	5.2	11.8	4.6	3.5	0.07	0.29	49.4
10% above average	7.5	2.6	2.3	1.1	5.7	7.0	5.8	13.0	5.0	3.8	0.08	0.32	54.3
10% below average	6.1	2.1	1.9	0.9	4.7	5.7	4.7	10.7	4.1	3.1	0.06	0.27	44.5

Relationship of Data to Stormwater Management Plan (SWMP)

Monthly rain data relates well to monthly monitoring of water quality. Area-specific rain data provides a relationship between creeks, basins, bays and projects. Rain is the dominant factor in stormwater pollution so having temporal and spatial rain data is valuable to identifying and managing pollution sources and crafting remedies.

Sarasota County NPDES MS4 2016 Annual Report

8. TMDL Status Report

TMDL Status Report
Sarasota County NPDES MS4 Annual Report for 2016 (Year Three)

- Currently there are 151 WBIDs in Sarasota County
    - Sixteen have TMDLs (1 from FDEP and the rest from EPA)
    - Thirty three are impaired
    - Impairment parameters include bacteria, nutrients, dissolved oxygen and copper

- TMDL priorities for this permit term are Alligator Creek (WBID 2030) for nitrogen and Phillippi Creek (WBID 1937) for bacteria

- In 2010, a TMDL for fecal coliform bacteria in Gottfried Creek (WBID 2049) allocated a 74% fecal coliform load reduction to nonpoint sources. In 2016 the FDEP concurred with the final report of Sarasota County's proactive Walk the WBID Exercise. Data from 2016 is elevated at one of two stations and a follow up investigation will be conducted at Station GOT-2 as per the Proactive Prevention Actions in the report.

Gottfried Creek Monitoring Station GOT-2 located at Park Forest Boulevard												
	January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Fecal Coliform	220	770	140	130	310	360	240	290	20	380	650	1,160
Enterococci	710	1,400	530	290	310	360	6,200	1,900	580	670	14,000	1,800
Gottfried Creek Monitoring Station GOT-3 located at Tangerine Woods Boulevard												
	January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Fecal Coliform	160	430	10	190	30	80	260	1,300	640	290	20	100
Escherichia coli	336	420	10	121	41	85	201	158	75	379	10	10

- In 2010, the EPA produced a TMDL for Phillippi Creek (WBID 1937) that allocated a 98% reduction of fecal coliform bacteria.

  Sarasota County conducted a Walk the Watershed (WTW) event in the Phillippi Creek watershed from August July to March 2017 in an effort to identify sources of bacterial pollution in the creek. The event had several purposes: 1) receive input from local agencies and residents about potential sources for bacterial pollution; 2) conduct field surveys and sampling events based on that input to isolate potential sources; and 3) provide education and outreach to eliminate sources.

  Field investigations were conducted from August 2016 to March 2017 with staff from the City of Sarasota Utilities and Sarasota County Stormwater participating. Nine bacterial hotspots were investigated, with field staff documenting field conditions upstream and conducting additional water quality sampling. Initial results have did

not find clear indications of sources of bacterial pollution. The WTW activity has narrowed down the list of potential sources of pollution and provided a clearer picture of where the areas of education and outreach should focus.

- In 2006, an EPA TMDL for Alligator Creek (WBID 2030) allocated a 28.2% reduction in nitrogen. In the TMDL, the existing load was 5,370 kg/year and the target load was 3,857 kg/year. The difference between existing and target is 1,512 kg or 3,336 pounds.

  In 2016, Sarasota County operated the Briarwood Stormwater Treatment Facility to reduce the amount of nitrogen and other pollutants reaching Alligator Creek. Over the course of the year a reduction of about 1,960 pounds of nitrogen loading was measured, which is over 50% of the TMDL goal. Additional improvements to the operation of the BSTF are expected to improve load reductions in the future.

  In addition, the Venice Gardens community is very active in improving lake water quality by planting shorelines with aquatic plants and deploying floating wetland islands. In cooperation with the community, Sarasota County planted four demonstration shorelines along these highly eutrophic lakes and co-hosted a well-attended and well-publicized open house. Planting is an effort to shift from a plankton-dominated lake to a macrophyte-dominated lake that will export fewer nutrients downstream.

- The Tampa Bay Estuary Program (TBEP) worked with partners to form a Nitrogen Management Consortium and Reasonable Assurance Plan to restore seagrass and water quality in Tampa Bay. In 2010, the FDEP allocated a Water Quality Based Effluent Limit to Sarasota County for 8.2 tons of nitrogen. Sarasota County provides pollutant removal information for Cooper Creek to the TBEP as needed.

- Sarasota County continues to make significant inroads towards reduction of water pollution.
    - The Phillippi Creek Septic System Replacement Program continues to convert residents from old septic systems to centralized and modern wastewater treatment facilities with effluent reuse capabilities. The program cost is roughly $100,000,000.
    - The $13M Dona Bay Project in the Cowpen Slough watershed was completed in early 2017 and is filling with water. Pollutant removal to the Dona and Roberts Bays area is expected to improve water quality, seagrass, and oysters as well as beach water quality.
    - The expansion of the Celery Fields Regional Stormwater Facility was completed in 2013. A monitoring study showed overall 50% removal efficiency for TP, 53% for TN and 82% for solids and it applies to a large 3,600 acre contributing area.
    - Creative outreach is spreading the message about reducing fertilizer usage and cleaning up after the dogs.


pick it up!
THERE IS NO
POOP FAIRY


PROTECT OUR
WATERS
RAYS
Spread FUN,
not fertilizer
June 1 - Sept. 30

Sarasota County NPDES MS4 2016 Annual Report
Monitoring Data Summary

9. Sarasota County Monitoring Plan

Monitoring Plan for the Sarasota County National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit

February 15, 2013

Submitting a monitoring plan to Florida Department of Environmental Protection (FDEP) is required by the National Pollutant Discharge Elimination System (NDPES) Municipal Separate Storm Sewer System (MS4) permit and State rules. The objective of the permit is to reduce pollutant discharges from urban stormwater to the waters of the State to the maximum extent practicable by implementing a Stormwater Management Program (SWMP). The overall purpose of monitoring is to determine the effectiveness of the SWMP. More specific monitoring goals may include prioritizing areas for additional controls, identifying pollutant sources, characterizing water quality trends, modeling pollutant loads, or assessing impaired water bodies. This monitoring plan is to fulfill Part V.B., Monitoring and Reporting Requirements and Monitoring Data Collection of permit FLS000004 for Sarasota County, the City of Sarasota, the City of Venice, the Town of Longboat Key and the Florida Department of Transportation (FDOT), but not including the City of North Port.

Background

Sarasota County encompasses parts of two watersheds: the Myakka River and the Southern Coastal Basin. Within the watersheds are 26 sub-basins named after small creeks. Other water bodies include a series of coastal bays, numerous wetlands, a handful of natural lakes, thousands of ponds, and an extensive network of canals and ditches.

Several agencies are actively involved in watershed management in the area, including three National Estuary Programs (NEPs), the South West Florida Water Management District (SWFWMD), the Environmental Protection Agency (EPA), the FDEP, the County, four Municipalities, and FDOT. Previous studies have highlighted the need to protect receiving waters from nutrients, sedimentation, toxins, and bacteria. Unnatural volumes and timing of stormwater are often cited as a problem. Implementation of the SWMP has been successful since 1995. Many projects have been implemented to reduce pollution from stormwater, sanitary sewers, erosion, and septic systems.

Joint Monitoring Plan

<u>Ambient Water Quality of Bays</u>

Healthy estuaries are among the foremost economic values to our community. Excessive stormwater pollution of the bays can have negative impacts on fish and wildlife, businesses, and the health of our citizens. Monitoring bays provides an integrated assessment of the cumulative impacts of stormwater.

Monthly water samples will be analyzed for specific conductance, salinity, temperature, pH, dissolved oxygen, DO saturation, light attenuation, secchi depth, total nitrate + nitrite, total kjeldahl nitrogen, ammonia nitrogen, orthophosphate, total phosphorus, turbidity, color, 5-day biochemical oxygen demand, and corrected chlorophyll A.

Sampling locations (See Appendix A) will be distributed among all bays, including Sarasota Bay, Roberts Bay North (Sarasota), Little Sarasota Bay, Dryman Bay, Blackburn Bay, Lyons Bay, Dona Bay, Roberts Bay South (Venice), the Intracoastal Waterway (Venice) and Lemon Bay.

Ambient Water Quality of Watersheds

Monitoring water quality in the watersheds is a direct assessment of management success. This program is valuable in measuring compliance with surface water quality standards, identification of impaired waters, and numeric nutrient criteria.

Monthly water samples will be taken from creeks and rivers throughout Sarasota County (See Appendix B). Special attention will be paid to those water bodies designated as not meeting regulatory criteria.

Samples will be analyzed for specific conductance, salinity, temperature, pH, dissolved oxygen, DO saturation, secchi depth, total nitrate + nitrite, total ammonia, total kjeldahl nitrogen, total orthophosphorus, total phosphorus, 5-day biochemical oxygen demand, total suspended solids, turbidity, color and corrected chlorophyll-A (as appropriate).

Biological Monitoring

Oyster Monitoring: Oysters are naturally abundant in coastal creeks and appropriate timing of freshwater is essential to their survival. As a keystone organism, oysters provide habitat by building reefs, improve water quality by filter feeding, stabilize shorelines, and are a delicious food. Oysters will be monitored twice per year in select creeks as a direct indicator of successful watershed management.

Seagrass Monitoring: Seagrass is rebounding to historic levels in the bays of Southwest Florida because of successful wastewater and stormwater management. Seagrass meadows are critical habitat for the fishing economy and have inherent ecological value. Seagrass is the response variable used in the development of Numeric Nutrient Criteria. In cooperation with the SWFWMD, the FWC, and the NEPs, the health of seagrass will be monitored during summer and winter seasons to determine status and trends and also to enhance the accuracy of the SWFWMD aerial surveys.

Scallop Monitoring: Bay scallops are sensitive indicators of excessive freshwater inflows to bays. In cooperation with the Florida Fish and Wildlife Conservation Commission (FWC) and others, scallop monitoring may include larval surveys, adult surveys or survival rates of sentinels.

Pollutant Load Modeling

Modeling of pollutant loading identifies priority areas for pollution reduction and also estimates trends in loading of nutrients and other pollutants. The Spatially Integrated Model for Pollutant Loading Estimates (SIMPLE-Monthly) was developed in cooperation with the SWFWMD and was used for the development of loading targets for Numeric Nutrient Criteria and County watershed plans. The model will be used to comply with the Annual Pollutant Loading and Event Mean Concentration requirement of the NPDES MS4 permit.

Rainfall

Rainfall data will be used to explain the ambient monitoring results, the pollutant loading, and the effectiveness of the SWMP. Rainfall is the principal driving force in understanding stormwater and stormwater pollution. Data sources may include the National Weather Service, the Southwest Florida Water Management District, or the County's Automated Rainfall Monitoring System (ARMS) that also has stage and flow data for selected stations.

Evaluation of the Effectiveness of SWMP

The monitoring program is intended to assess the SWMP, to identify problem areas, to evaluate progress, and to assess pollutant loading. Ambient monitoring in bays is an effective method to evaluate progress and identify problem areas on a broad scale. Declining trends or noncompliance with bay standards would indicate a renewed focus is needed in those bays and associated watersheds. Creek and river ambient monitoring provides a similar but more basin-specific focus. GIS-based pollutant load modeling identifies where on the landscape the pollutants are originating. Based on previous studies, it is expected that the volume of runoff is more influential than the concentration of the runoff. This comprehensive monitoring approach is expected to prioritize activities in the SWMP and also to identify where water quality improvement projects should be sited.

Quality Assurance

All monitoring shall be conducted in accordance with Chapter 62-160, Florida Administrative Code and all National Environmental Laboratory Accreditation Conference (NELAC) standards. Participation in the Southwest Florida Regional Ambient Monitoring Program ("RAMP") will continue. RAMP fosters scrutiny of data outliers and improvement of sampling and analysis techniques to maintain a central tendency among results from various sampling agencies.

Data Analysis and Reporting

Basic analysis of the data will be submitted in the annual reports to the FDEP and will include narrative, tabular, graphical depictions and trend analysis, as appropriate. Monitoring data and reports shall be regularly posted on the Sarasota Water Atlas website at www.sarasota.wateratlas.org. Metadata will be provided on request. Ambient water quality data will be posted to the STORET database.