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 (http://www.dep.state.fl.us/water/stormwater/npdes/contacts.htm). Files larger than 10MB may be placed on the FTP site at: ftp://ftp.dep.state.fl.us/pub/NPDES_Stormwater/. After uploading files, email the MS4 coordinator or NPDES Program Administrator to notify them the report is ready for downloading; or by mail to the address in the box at right.
- Refer to the Form Instructions for guidance on completing each section.
- **Please print or type information in the appropriate areas below.**

Submit the form and attachments to:
Florida Department of Environmental Protection
Mail Station 3585
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SECTION I. BACKGROUND INFORMATION			
A.	Permittee Name: City of Riviera Beach		
B.	Permit Name: Palm Beach County MS4		
C.	Permit Number: FLS000018-004		
D.	Annual Report Year: ☐ Year 1 X Year 2 ☐ Year 3 ☐ Year 4 ☐ Year 5 ☐ Other, specify Year:		
E.	Reporting Time Period (month/year): 10/01/17 through 09/30/18		
F.	Name of the Responsible Authority: Terrance Bailey		
	Title: Public Works Director		
	Mailing Address: 1451 W. 15th Street		
	City: Riviera Beach	Zip Code: 33404	County: Palm Beach
	Telephone Number: (561) 845-4066	Fax Number: Not Applicable (N/A)	
	E-mail Address: tbailey@rivierabch.com		
G.	Name of the Designated Stormwater Management Program Contact (if different from Section I.F above): Sedrick Clarke		
	Title: Stormwater Manager		
	Department: Public Works		
	Mailing Address: 1451 W. 15th Street		
	City: Riviera Beach	Zip Code: 33404	County: Palm Beach
	Telephone Number: (561)814-6492	Fax Number: N/A	
	E-mail Address: sclarke@rivierabch.com		

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 X N/A, there are 5 major outfalls
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 X N/A
C.	Is the change in the total number of outfalls due to lands annexed or vacated? ☐ Yes ☐ No X Not Applicable

SECTION III. PART V.B. ASSESSMENT PROGRAM	
A.	Provide a brief statement as to the status of water quality monitoring plan implementation. Status may include sampling frequency changes, monitoring location changes, or sampling waiver conditions. *DEP Note: If permittee participates in a collaborative monitoring plan, permittee may refer to a joint response as defined by the interlocal agreement.* Name and date of the approved plan: Current approved plan for the Group Monitoring Plan is September 8, 2016 (with issuance of the Cycle 4 permit). The City of Riviera Beach Assessment Plan was submitted on September 18, 2017; comments on the Assessment Plan from the Florida Department of Environmental Protection (FDEP) were received**;** the FDEP comments were incorporated into the revised Assessment Plan, then re-submitted to FDEP. Status: Approved (June 7, 2018)
B.	Provide a brief discussion of the monitoring and loading results to date which includes a summary of the water quality monitoring data and / or stormwater pollutant loading changes from the reporting year. *DEP Note: Results must be specific to the permittee's SWMP.* Please refer to the Cycle 4 Joint Annual Report for a summary of the Group's water quality monitoring results for the reporting period. Refer to the Cycle 3, Year 6 Joint Annual Report for proposed pollutant loading analysis changes. The best available information on existing pollutant loading estimates is documented in the Cycle 3, Year 3 Joint Annual Report. Attached is the City of Riviera Beach 'Water Quality Monitoring Report' (Attachment 1).
C.	Attach a monitoring data summary as required by the permit. An analysis of the data discussing changes in water quality and/or stormwater pollutant loading from previous reporting years. *DEP Note: Analysis must be specific to the permittee's SWMP.* *See response for Section III.B. above.*

SECTION IV. FISCAL ANALYSIS	
A.	Total expenditures for the NPDES stormwater management program for the current reporting year: **$** 3,316,167
B.	Total budget for the NPDES stormwater management program for the subsequent reporting year: **$** 4,270,320
C.	Did the current reporting year resources decrease from the previous year? Y / N **X** If program resources decreased, provide a discussion of the impacts on the implementation of the SWMP. Not Applicable (N/A)

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	Required Attachments	Permit Citation	Attachment Number/Title
X		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.	Part III.A	Attachment 3 (Responses to FY 16/17 Audit)
☐	X	An explanation of why the minimum inspection frequency in Table II.A.1.a. was not met, if applicable.	Part II.A.1	
☐	X	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.4	
X	☐	A monitoring data summary as directed in Section III.C above and in accordance with Rule 62-624.600(2)(c), F.A.C.	Part V.B.3	Attachment 1
X		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.	Part III.A.1	Included in Attachment ~~III~~ 3
X	☐	YEAR 2: A summary review of codes and regulations to reduce the stormwater impact from development.	Part III.A.2	Attachment 2
☐	X	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.	Part V.A	
☐	X	YEAR 3: Summary of TMDL Monitoring Results (if applicable).	Part VIII.B.2	
☐	X	YEAR 3: Bacteria Pollution Control Plan (if applicable).	Part VIII.B.3	
☐	X	YEAR 4: A follow-up report on plan implementation of changes to codes and regulations to reduce the stormwater impact from development.	Part III.A.2	
☐	X	YEAR 4: A report on any amendments to the applicable legal authority (if applicable).	Part III.A.7.a	
☐	X	YEAR 4: Permit re-application information in accordance with Rule 62-624.420(2), F.A.C. • The monitoring plan (with revisions, if applicable). • 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 Part V.A.3	
☐	X	YEAR 4: TMDL Supplemental SWMP (if applicable).	Part VIII.B.3	

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): Terrance Bailey

Title: Public Works Director

Signature: _____ Date: 03 / 25 / 19

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									
	Report the current known inventory. Report the number of inspection and maintenance activities conducted for each applicable 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. *Note: Delete structures that are not in your MS4's inventory. 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.*									
	Type of Structure	**Number of Structures**	**Number of Inspections**	**Percent Inspected**	**Number of Maintenance Activities**	**Percent Maintained**				
	Exfiltration trench/French drains (lf)	150	0	0	0	0		Exfiltration Trench-Structural Control Inspection Form	DPW/Stormwater personnel	Inspections required once every 3 years; next inspections scheduled for Year 3 of permit (FY 2018-2019); See Attachment 3
	Grass conveyance swales (miles)	33	0	0	0	0		Grass Swale - Structural Control Inspection Form	DPW/Stormwater personnel	Inspections required once every 3 years; next inspections scheduled for Year 3 of the permit (FY 2018-2019); See Attachment 3
	Wet detention systems	3	0	0	0	0		Wet Detention	DPW/Stormwater personnel	Inspections required once every 3 years;

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							System-Structural Control Inspection Form		next inspections scheduled for Year 3 of permit (FY2018-2019); See Attachment 3
	Pollution control boxes	1	4	100	1	100	PCD #1 (Pollution Control Box)-Structural Control Inspection Form	DPW/Stormwater personnel	Inspections required quarterly; See Attachment 3
	Major outfalls	5	5	100	0	100	Major Stormwater Outfall #1-5-Structural Control Inspection Forms	DPW/Stormwater personnel	All outfalls to be inspected each year: See Attachment 3
	Weirs or other control structures	1	2	100	1	100	Control Structure #1-Weir Inspection Form	DPW/Stormwater personnel	Weirs inspected semi-annually; See Attachment 3
	Pipes/culverts (miles)	4	12	10	**1**	100	Pipes/Culverts Inspection Form	DPW/Stormwater personnel	10% of all pipes/culverts to be inspected each year; See Attachment 3
	Canals	4	12	10	12	10	Conveyance (Ditch & Canal) System-Structural Control Inspection Form	DPW/Stormwater personnel	10% of all canals inspected each year; See Attachment 3
	Inlets/catch basins/grates	41	41	10	Daily	10	Inlets/Catch Basins/Grates-Structural Control Inspection Form	DPW/Stormwater personnel	10% of inlets/catch basins/grates to be inspected each year;

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									See Attachment 3
	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.	See above					All documentation listed above	DPW/Stormwater Manager	See Attachment 3

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Part III.A.1 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: The entire stormwater system and stormwater structures are inspected, cleaned and monitored at regular intervals, or sooner if there is a significant rain event.				
	Limitations: Filing system and better documentation of inspections is needed.				
	SWMP revisions implemented to address limitations: Administration/filing system being updated to a computer-based system				
Part III.A.2	**Areas of New Development and Significant Redevelopment**				
	Report the number of significant development projects, including new and redevelopment, reviewed and approved by the permittee for post-development stormwater considerations.				
	Number of significant development projects reviewed	0	Site Plan Review Procedures contained in Stormwater Management Plan (SWMP)	Planning and Zoning staff	See Attachment 3
	Number of significant development projects approved	**0**	Site Plan Review Procedures contained in the SWMP	Planning and Zoning staff	See Attachment 3
	Provide in the Year 2 Annual Report the summary report of the review activity. Provide in the Year 4 Annual Report the follow-up report on plan implementation.				
	Year 2 ONLY: Attach the summary report of the review activity	1	LDR Update Report	Jack Horniman, Planning Consultant	See Attachment 2.
	Year 4 ONLY: Attach the follow-up report on plan implementation	N/A			
Part III.A.2 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Site plan review procedures and requirements; maintenance of the stormwater drainage system is good.				
	Limitations: None identified.				
	SWMP revisions implemented to address limitations: None				
Part III.A.3	**Roadways**				
	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. *Note: If the permittee does not contract activities, delete CONTRACTOR activities.*				
	PERMITTEE Litter Control: Frequency of litter collection	Daily	DPW	DPW/ **(Name**	Street

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			Maintenance Schedule		Sweeping
	PERMITTEE Litter Control: Estimated amount of area maintained (miles)	8.4 sq. miles	DPW Maintenance Schedule	DPW personnel	Street Sweeping
	PERMITTEE Litter Control: Estimated amount of litter collected (tons)	1.1	DPW Maintenance Schedule	DPW personnel	Street Sweeping
	CONTRACTOR Litter Control: Frequency of litter collection	N/A			No contracted services for litter control program
	CONTRACTOR Litter Control: Estimated amount of area maintained (lf)	N/A			No contracted services for litter control program
	CONTRACTOR Litter Control: Estimated amount of litter collected (cy)	N/A			No contracted services for litter control program
	OPTIONAL: 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. If you do not participate in an Adopt-A-Road program, report “0”.				
	Trash Pick-up Events: Total miles cleaned	1	DPW/ Sign-Up Sheet	DPW/Volunteers	'Keep America Beautiful' program
	Trash Pick-up Events: Estimated amount of litter collected (cy)	40	DPW/ Sign-Up Sheet	DPW/Volunteers	'Keep America Beautiful' program
	Adopt-A-Road: Total miles cleaned	0			No 'Adopt-A-Road' program
	Adopt-A-Road: Estimated amount of litter collected (cy)	0			No '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 and total phosphorus loadings that were removed by the collection of sweepings. If no street sweeping program is implemented, provide the explanation of why not in column F.				
	Frequency of street sweeping	Daily	DPW Maintenance Schedule	DPW personnel	
	Total miles swept	1284	DPW Maintenance Schedule	DPW personnel	

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	Estimated quantity of sweeping material collected (pounds)	416,016	DPW Maintenance Schedule	DPW personnel	
	Total phosphorous loadings removed (pounds)	150	FSA Spreadsheet	DPW personnel	
	Total nitrogen loadings removed (pounds)	234	FSA Spreadsheet	DPW personnel	
	Report the equipment yards and maintenances shops that support road maintenance activities, and the number of inspections conducted for each facility.				
	Name of Facility	**Number of Inspections**			
	Public Works	0	DPW Maintenance Schedule	DPW/Stormwater Manager	None required this permit year
Part III.A.3 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Ability **to** monitor drainage structures with television capabilities and fix structure damage when warranted				
	Limitations: Funding, when it comes to complex issues.				
	SWMP revisions implemented to address limitations: Information exchange with other municipalities with similar stormwater system issues.				
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.				
	Flood control projects completed during the reporting period	0	DPW Work Order	DPW/Stormwater Manager	N/A
	Flood control projects completed that did <u>not</u> include stormwater treatment	0			N/A
	Stormwater retrofit projects planned/under construction	0			N/A
	Stormwater retrofit projects completed	0			N/A
	If there were projects that did not include stormwater treatment, provide as an attachment a list of the projects and an explanation for each of why it did not.	0			N/A
Part III.A.4 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Quarterly canal maintenance and weekly storm drain maintenance.				
	Limitations: Keeping trash and debris out of the path of the water flow.				
	SWMP revisions implemented to address limitations: Increased public education to maintain awareness of keeping the stormwater system pollution free.				

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Part III.A.5	**Municipal Waste Treatment, Storage, and Disposal Facilities Not Covered by an NPDES Stormwater Permit**				
	Report the applicable facilities and the number of the inspections conducted for each facility.				
	Name of Facility	**Number of Inspections**			
	N/A				No municipal facilities
Part III.A.5 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: There are no waste TSD facilities in the City; City wastes are treated, stored and disposed of at the Palm Beach County Solid Waste Authority (PBCSWA) facilities.				
	Limitations: N/A				
	SWMP revisions implemented to address limitations: N/A				
Part III.A.6	**Pesticides, Herbicides, and Fertilizer Application**				
	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 who have been trained through the Green Industry BMP Program and the number of contracted commercial applicators of fertilizer who are FDACS certified / licensed.				
	PERSONNEL: FDACS public applicators of pesticides/herbicides	1	State Licenses	DPW/Oswald Newbold	
	CONTRACTORS: FDACS commercial applicators of pesticides/ herbicides	0			
	PERSONNEL: Green Industry BMP Program training completed	1	State Licenses	DPW/Oswald Newbold	
	CONTRACTORS: FDACS certified / licensed applicators of fertilizer	0			
	Provide a copy of the adopted ordinance with the Year 2 Annual Report. If this provision is not applicable because the permittee is not within the watershed of a nutrient-impaired water body, indicate that in Column F.				
	Year 2 ONLY: Attach copy of adopted Florida-friendly ordinance	1	Fertilizer Ordinance (Florida Friendly Landscape Regulations)	City Council	Adopted June 20, 2012; refer to the MS4 website
	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, and the number of Web site visits (if applicable).				
	Public Education and Outreach Program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			

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	Brochures/Flyers/Fact sheets distributed	50	Brochures/ Flyers/Door hangers	PBC Stormwater Systems Group; PBCSWA; FDEP; DPW/Stormwater Manager	
	Public displays (e.g. kiosks, storyboards, posters, etc.)	8	Display boards	DPW/Stormwater Manager	
Part III.A.6 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: DPW/Stormwater management personnel documents all restricted and non-restricted chemicals used during application; City has adopted a Fertilizer Ordinance; good public information system being implemented.				
	Limitations: Filing system				
	SWMP revisions implemented to address limitations: Have commenced a computer based filing system.				
Part III.A.7.a	**Illicit Discharges and Improper Disposal — Inspections, Ordinances, and Enforcement Measures**				
	Report amendments in Year 4.				
	Year 4 ONLY: Attach a report on amendments to applicable legal authority	N/A			
Part III.A.7.c	**Illicit Discharges and Improper Disposal — Investigation of Suspected Illicit Discharges and/or Improper Disposal**				
	Report on the proactive inspection program, including the number of inspections conducted by the permittee, the number of illicit activities found, and the number and type of enforcement actions taken.				
	Proactive inspections for suspected illicit discharges	96	DPW /Structural Control Inspection Forms	DPW/Sedrick Clarke	
	Illicit discharges found during a proactive inspection	0			No illicits found
	NOV/WL/citation/fines issued for illicit discharges found during proactive inspection	0			None issued

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	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.				
	Reports of suspected illicit discharges received	0	DPW/ Phone Log	DPW/ Stormwater Utility	No reports received
	Reactive investigations of reports of suspected illicit discharges etc.	0			No reports or investigations
	Illicit discharges etc. found during reactive investigation	0			None found
	NOV/WL/citation/fines issued for illicit discharges etc. found during reactive investigation	0			None issued
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.				
	Personnel trained	2	Illicit Discharge Detention Elimination (IDDE) video	DPW/Stormwater Manager; City Planning Consultant	
	Contractors trained	0			No contractors used for these purposes
Part III.A.7.d	**Illicit Discharges and Improper Disposal — Spill Prevention and Response**				
	Report on the spill prevention and response activities, including the number of spills addressed.				
	Hazardous and non-hazardous material spills responded to	0			No spills reported during permit year
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.				
	Personnel trained	2	IDDE video	DPW/Stormwater Manager; City Planning Consultant	
	Contractors trained	0			No contractors used by City
Part III.A.7.e	**Illicit Discharges and Improper Disposal — Public Reporting**				
	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, and the number of Web site visits (if applicable).				
	Public Education and Outreach Program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			

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	Brochures/Flyers/Fact sheets distributed	50	Brochures/ Flyers/Door hangers	PBC Stormwater Systems Group; PBCSWA; FDEP; DPW/ Stormwatrer Manager	
	Public displays (e.g. kiosks, storyboards, posters, etc.)	8	Display boards	DPW/Stormwater Manager	
Part III.A.7.f	**Illicit Discharges and Improper Disposal — Oils, Toxics, and Household Hazardous Waste Control**				
	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, and the number of Web site visits (if applicable).				
	Public Education and Outreach Program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			
	Brochures/Flyers/Fact sheets distributed	50	Brochures/ Flyers/Door hangers	PBC Stormwater Systems Group; PBCSWA; FDEP; DPW/Stormwater Manager	
	Public displays (e.g. kiosks, storyboards, posters, etc.)	8	Display boards	DPW/Stormwater Managerl	

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Part III.A.7.g	**Illicit Discharges and Improper Disposal — Limitation of Sanitary Sewer Seepage**				
	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. Report only the SSOs and inflow / infiltration incidents into the MS4.				
	Owner of the sanitary sewer system	City of Riviera Beach			
	Activity to reduce/eliminate SSOs and I&I: (description)	0	Work Order	Utilities Department staff	See Attachment 3
	Activity to reduce/eliminate SSOs and I&I: (description)	0	Work Order	Utilities Department staff	See Attachment 3
	SSO incidents discovered	0	Work Order	Utilities Department staff	None discovered
	SSO incidents resolved	0	Work Order	Utilities Department staff	None resolved
	Inflow / infiltration incidents discovered	0			None discovered
	Inflow / infiltration incidents resolved	0			None resolved
Part III.A.7 Summary	For activities required by Part III.A.7: Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: No illicit discharges or improper disposal reported during the permit year; public education materials (brochures, flyers, door hangers); trsining of personnel has been performed.				
	Limitations: None identified				
	SWMP Revisions implemented to address limitations: None				
Part III.A.8.a	**Industrial and High-Risk Runoff — Identification of Priorities and Procedures for Inspections**				
	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. Report on the high-risk facilities inspection program, including the number of inspections conducted and the number and type of enforcement actions taken.				

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**
	Type of Facility	**Number of Facilities**	**Number of Inspections**	**Enforcement Actions**			
	Operating municipal landfills	0					No City landfills
	Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	0					No City facilities
	EPCRA Title III, Section 313 facilities (TRI)	166	0				Inspections required once in 5 year term of permit; Inspections to be performed in Year 3 of permit;
	Facilities determined as high risk by the permittee	0					See Attachment 3
Part III.A.8.b	**Industrial and High-Risk Runoff — Monitoring for High Risk Industries**						
	Report the number of high risk facilities sampled.						
	High risk facilities sampled	0					None sampled
Part III.A.8 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.						
	Strengths: Identify deficiencies and develop accurate list of high risk facilities.						
	Limitations: Inaccurate list of high risk facilities identified by the City; need to identify in future reporting						
	SWMP revisions implemented to address limitations: None						
Part III.A.9.a	**Construction Site Runoff — Site Planning and Non-Structural and Structural Best Management Practices**						
	Report the number of permittee and private pre-construction site plans reviewed for stormwater, erosion, and sedimentation controls, and the number approved.						
	PERMITTEE SITES: Construction site plans reviewed	0			City Site Plan Review	Building Department	No permittee construction site plans reviewed during permit year
	PERMITTEE SITES: Construction site plans approved	0					N/A
	PRIVATE SITES: Construction site plans reviewed	0					See Attachment III
	PRIVATE SITES: Construction site plans approved	0					See

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**
					Attachment III
	Report the number of development permit applicants notified of the ERP and CGP, and the number of applicants who confirmed ERP and CGP coverage.				
	Notified of ERP stormwater permit requirements	0			
	Confirmed ERP coverage	0			
	Notified of CGP stormwater permit requirements	0			
	Confirmed CGP coverage	0			
Part III.A.9.b	**Construction Site Runoff — Inspection and Enforcement**				
	Report on the inspection program for privately-operated and permittee-operated 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.				
	PERMITTEE SITES: Active construction sites	0			No active Permittee construction plans reported/documented
	PERMITTEE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	N/A			
	PERMITTEE SITES: Percentage of active construction sites inspected	N/A			
	PRIVATE SITES: Active construction sites	0			No active private site construction plans reported/documented
	PRIVATE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	N/A			
	PRIVATE SITES: Percentage of active construction sites inspected	N/A			
	Enforcement Action	N/A			
Part III.A.9.c	**Construction Site Runoff — Site Operator Training**				
	Report the type of training activities, the number of inspectors, site plan reviewers and site operators trained (both in-house and outside training).				
		DEP Certification	**Annual Training**		
	Permittee construction site inspectors	5	0	Soil and Erosion Control (SEC) video	DPW personnel	March 20, 2019 refresher training completed.
	Permittee construction site plan reviewers		0			No refresher

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**
						training
	Permittee construction site operators		0			No refresher training
Part III.A.9 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.					
	Strengths: Monitoring construction sites more to ensure compliance with NPDES and CRB.					
	Limitations: Assuring that private contractors develop and maintain good best management practices					
	SWMP revisions implemented to address limitations: More monitoring.					

SECTION VIII. 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.**
	N/A	
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)**
	N/A	

SECTION IX. TMDL Status Report

A. YEAR 1 Provide a table summarizing the status of the TMDL process. Include a list of prioritized TMDLs and their monitoring and implementation schedule; and include the Identification number of the outfall prioritized for TMDL monitoring.

WBID Number	Segment/ Waterbody/ Basin	Pollutant of Concern	TMDL DEP / EPA	Percent Reduction (WLA)	Priority Rank	Priority Outfall	Monitoring Summary / BPCP Due Date	Supplemental SWMP Due Date
N/A								

B. YEAR 3 and annually thereafter, provide a summary of the estimated load reductions that have occurred for the pollutant(s) of concern being discharged from the MS4 to the TMDL water body during the reporting period and cumulatively since the date the Supplemental SWMP was implemented.

Year 3: Submit a Monitoring data summary or BPCP (if applicable).

Year 4: Submit a Supplemental SWMP (if applicable).

WBID Number	Pollutant of Concern	Monitoring Summary / BPCP Submitted	Supplemental SWMP Submitted	Projected load reductions OR Actual load reductions to date
N/A				

C. Provide a brief statement as to the status of TMDL implementation according to Part VIII.B of the permit (e.g. status of monitoring to validate WLA):

No discharge to a TMDL WBID at the time of permit issuance.

City of Riviera Beach
(NPDES Stormwater Permitting Program)

'Water Quality Monitoring Report'

(submitted as **Attachment 1** to the City of Riviera Beach, Florida Permit Year 2, Fourth Term Annual NPDES Report)

Prepared by
City of Riviera Beach and JLH Associates
February 2019

'Water Quality Monitoring Report'

Purpose

The purpose of the 'Water Quality Monitoring Report' is to provide information for the ***City of Riviera Beach*** to determine the overall effectiveness of its Stormwater Management Plan Program in reducing stormwater pollutant loadings from its Municipal Separate Sewer System (MS4) to receiving bodies.

The following items and concerns are examined as part of this water quality monitoring report:

A. **Impaired Water Bodies** - The Florida Department of Environmental Protection (FDEP) assessment program for water body impairments will be analyzed and Riviera Beach's contribution, if any, to those impairments will be assessed.

B. **Water Quality Monitoring Program** - The water quality monitoring program is intended to identify local sources where urban stormwater is affecting surface water resources.

C. **Water Quality Trend Analysis** – Using the water quality monitoring results trends can be identified and evaluated.

D. **Pollutant Loading Estimates/Results** - Pollutant loadings and results are reported.

E. **Conclusions** - Final conclusions are made regarding water quality and nutrient loading impacts.

Impaired Water Bodies

The Florida Department of Environmental Protection (FDEP) has an ambient water quality and assessment program for water body impairments. The State is divided into five (5) working groups, with each group cycling through a 5-year assessment cycle. The 5-year cycle includes planning, water quality, monitoring, preliminary evaluation, public meetings, final evaluation, and Secretarial (State) adoption of the verified lists. The City of Riviera Beach is in Group 3. The latest (Cycle 3) assessment occurred in 2017. Based on the FDEP verified assessment mapping and the City's MS4, the City has discharges into FDEP WBID 3242 (C-17 Basin/D Canals), WBID 3226W2 (Lake Worth Lagoon/Intracoastal Waterway), WBID 3226 E1 (Lake Worth Lagoon, Northern Segment) and 3226 EB (Lake Worth Lagoon Phil Foster Park). WBID 3226 E1 is listed as an 'impaired' water for nutrients (Chlorophyll-a). WBID 3242 is listed as 'impaired for Dissolved Oxygen. WBID 3226 EB is listed as 'impaired' for bacteria. WBID 3226W2 is not listed as an 'impaired' water.

Water Quality Monitoring Program

As a co-permittee in the Palm Beach Countywide Stormwater permit, the City of Riviera Beach uses the ambient water quality data provided by Palm Beach County (PBC) MS4 Group.

Based on the location of outfall of the Riviera Beach MS4, three (3) monitoring stations have been established. Station LWL-4 is a Palm Beach County Environmental Resource Management (ERM) Monitoring Site and Station; C17S44 is a South Florida Water Management Monitoring Site; and, 12A is also operated ERM. The following Table identifies these monitoring stations along with relevant information about the locations. More specifically, Station LWL-4 is located at the John D. MacArthur Beach State Park, east of A1A just north of the Riviera Beach City limits. Station C17S44 is located at the Alt. A1A Bridge approximately one (1) mile north of Northlake Boulevard, and Station 12A is located at the 45th Street Bridge just south of the southern corporate limits in the City of West Palm Beach.

Table 1
MS4 Monitoring Stations

Monitoring Station Number	Location Description	Northing/ Easting	Receiving Water Body
LWL-4	John D. MacArthur Beach Park - East of A1A	26.8004/ -80.0443	Lake Worth Lagoon (North Segment)
C17S44	Alt. A1A Bridge 1 mile N. of Northlake Blvd.	26.8172/ -80.0820	C17 Canal
12A	45th Street Bridge just east of I-95 intersection	26.7586/	C17 Canal

Source: 2016-17 PBC MS4 Year1, Cycle 4 Joint Annual Report (Ref. Table 5-1 Water Quality Monitoring Site Locations, p.29).

The primary concern that FDEP has regarding the stormwater pollutant discharges is related to nutrients and their impacts on the receiving water. The City of Riviera Beach evaluated nutrient monitoring results at the above three (3) locations. The results referenced in the Palm Beach County (PBC) MS4 Year 1, Cycle 4 Joint Annual Report is used for evaluating the nutrient levels. Specifically, Total Nitrogen (TN), Total Phosphorus (TP) and Chlorophyll-A (a surrogate for nutrient enrichment) are analyzed and evaluated below.

The State has established numeric nutrient criteria for the Lake Worth Lagoon North Segment (TN ≤ 0.54 mg/l (Annual Geometric Mean - AGM), TP ≤ 0.044 mg/l AGM and Chlorophyll-a ≤ 2.9 ug/l AGM and for the C-17 Watershed in the South Florida Region the only numeric nutrient criteria is for Chlorophyll-a (≤ 20 ug/l AGM).

Based on information provided in the PBC MS4 Year 1, Cycle 4 Joint Annual Report, water quality monitoring results for the last 5 years (2013-2017) are provided in Tables 2 and 3 respectively for TN and TP at Station LWL-4 in the Lake Worth Lagoon North Segment; and, results for Chlorophyll-A at Station LWL-4 is only provided for 1 year and shown in Table below.

Table 2
Total Nitrogen (Annual Geometric Mean)
LWL-N
Values used (mg/l)

Year	Station LWL-4
2013	0.23
2014	0.14
2015	0.21
2016	0.31
2017	0.25

Source: PBC MS4 Year 1, Cycle 4 Joint Annual Report (Ref. Table 5-8 Total Nitrogen, p.102).

Table 3
Total Phosphorus (Annual Geometric Mean)
LWL-N
Values used (mg/l)

Year	Station LWL-4
2013	0.02
2014	0.02
2015	0.02
2016	0.02
2017	0.02

Source: PBC MS4 Year1, Cycle 4 Joint Annual Report (Ref. Table 5-9 Total Phosphorus, p.106).

Table 3
Total Chlorophyll-A (Annual Geometric Mean)
LWL-N
Values used (ug/l)

Year	Station LWL-4
2013	No Record
2014	No Record
2015	1.81
2016	No Record
2017	No Record

Source: PBC MS4 Year1, Cycle4 Joint Annual Report (Ref. Table 5-10 Total Chlorophyll-A. p.110).

Review of the results above indicate that values for TN in the Lake Worth Lagoon North Segment fluctuated somewhat in the 5-year period (2013-2017); however, the most recent results show a decrease in value. Values for TP have remained flat during the same 5-year period, while there is only one value for Chlorophyll-A. The data for all three nutrient parameters is all well below the State criteria.

Based on information provided in the PBC MS4 Year 1, Cycle 4 Joint Annual Report, water quality monitoring results for the last 10 years (2008-2017) are provided in Tables 5, 6 and 7, respectively, for TN, TP and Chlorophyll-A at Stations 12A and C17S44 in the C-17 Watershed. The data is presented and analyzed below.

Table 5
Total Nitrogen (Annual Geometric Mean)
C-17 Watershed
Values used (mg/l)

Year	Station 12A	C17S44
2008	1.35	1.08
2009	No Record	0.94
2010	1.67	0.93
2011	1.31	0.91
2012	1.16	0.91
2013	0.92	0.89
2014	0.93	0.39
2015	1.07	0.77
2016	0.98	0.83
2017	1.03	0.69

Source: PBC MS4 Year 1, Cycle 4 Joint Annual Report (Ref. Table 5-8 Total Nitrogen, p.102).

Table 6
Total Phosphorus (Annual Geometric Mean)
C-17 Watershed
Values used (mg/l)

Year	Station 12A	Station C17S44
2008	0.05	0.06
2009	No Record	No Record
2010	0.01	0.05
2011	0.06	0.05
2012	0.06	0.05
2013	0.06	0.05
2014	0.05	0.04
2015	0.04	0.04
2016	0.06	0.04
2017	0.05	0.03

Source: PBC MS4 Year1, Cycle 4 Joint Annual Report (Ref. Table 5-9 Total Phosphorus, p.104).

Table 7
Total Chlorophyll-A (Annual Geometric Mean)
C-17 Watershed
Values used (ug/l)

Year	Station 12A	Station C17S44
2008	12.28	No Record
2009	No Record	No Record
2010	17.26	No Record
2011	12.41	No Record
2012	17.74	No Record
2013	12.50	No Record
2014	20.44	No Record
2015	12.94	No Record
2016	11.78	No Record
2017	8.10	No Record

Source: PBC MS4 Year1, Cycle 4 Joint Annual Report (Ref. Table 5-10 Total Chlorophyll-A p.108).

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A review of the above results indicates that values for TN at Station 12A in the C-17 Watershed show mostly a downward trend in the 10-year period with a few minor fluctuations in results. TP values at Station 12A have remained stable in the same time period while values for total Chlorophyll-A have shown a significant decrease and well below the 20 ug/l standard. The reported values for TN, TP and Chlorophyll-A indicate that the C-17 Canal is not nutrient impaired, and that the City of Riviera Beach is not adversely affecting nutrient levels in the C-17 Watershed.

Water Quality Trends

Nutrient trends of the water quality data for the last 20 years are graphed for TN, TP and Chlorophyll-A at all three 3 monitoring station sites. Figures (graphs) in the PBC MS4 Year1, Cycle 4 Joint Annual Report contain separate watershed plots.

Review of the graphs applicable to TN and TP in the Lake Worth Lagoon North Segment indicate a 20-year downward trend for both nutrients (Ref. Figures 5-2 and 5-3, PBC MS4 Year1, Cycle 4 Joint Annual Report, p 120 and 132, respectively)). Total Chlorophyll-A (Ref. Figure 5-4 Chlorophyll-A, PBC MS4 Year1, Cycle 4 Joint Annual Report, p.144) indicates a slight upward trend in the 20-year period.

Review of the graphs applicable to TN and TP at Stations 12A and C17S44 (combined values) in the C-17 Watershed indicate slightly different trends during the 20-year period. TN (Ref. Figure 5-2 Year 1, Cycle 4 Joint Annual Report. p. 116) indicates a significant downward trend in values while TP indicates a very slight upward shift. (Ref Figures 5-2 and 5-3, PBC MS4 Year 1, Cycle 4 Joint Annual Report, p. 116 and 128 respectively). Chlorophyll-A data represents data from Station 12A only. Total Chlorophyll-A shows an increasing upward trend in values (Ref. Figure 5-4 PBC MS4 Year 1, Cycle 4 Joint Annual Report, p.140), but is well below the accepted 20 ug/l standard.

Pollutant Loading Estimates/Results

At this time the City does not have information on the loading contributions for Riviera Beach into the Lake Worth Lagoon North Segment and the C-17 Watershed. The Palm Beach County (PBC) MS4 group will be estimating pollutant loadings and reporting the information in the 3rd year report. This information is likely to be provided to the City of Riviera Beach and documented in the 3rd year report.

Riviera Beach has in place stormwater management programs that reduce the nutrient loading into the Lake Worth Lagoon North Segment and the C17 Watershed. These programs include maintenance of ditches and conveyance swales, wet and dry detention systems, liter control, street sweeping, public education material and activities (brochures and flyers for public distribution, MS4group activities and adopted Florida Friendly Landscape Regulations/Fertilizer Ordinance.

Conclusions

The City of Riviera Beach stormwater management programs are effective in reducing nutrient loadings. This is supported by the water quality monitoring programs (both FDEP and the MS4 group information). At this time there is no need to develop further stormwater management programs.

Summary Report

"Land Development Regulations and Code Review Aimed at Low Impact Design and Other Innovative Design Techniques"

(Submitted as **Attachment 2** to the City of Riviera Beach, Florida Permit Year 2, Fourth Term NPDES Annual Report)

Prepared by the City of Riviera Beach
and
JLH Associate

December, 2012
Revised/Updated February, 2019

EXECUTIVE SUMMARY

The ***City of Riviera Beach*** has undertaken a complete review of its codes and land development regulations (LDRs) in regard to Low Impact Design (LID) and other innovative design techniques. Determinations are made as to the adequacy of these regulations, the current status of these regulations and recommendations for future actions, if, and when, deemed appropriate. Chapters of the Riviera Beach Code of Ordinances are identified which were determined to be relevant to this review. Specific sub-sections and paragraphs are cited, and in many cases quoted or discussed. LIDs relevant to this low density, single family community are identified. They include regulations and techniques governing conveyance swales; pervious and impervious surfaces; landscaping, including the Florida Yards and Neighborhood (FYN) program, and conservation; refuse, garbage, toxic wastes and other nuisances; and, a review of the adopted City of Riviera Beach Comprehensive Plan. It has been determined that the regulations governing these subject areas are meeting the needs of this nearly developed community. The City adopted a Fertilizer Ordinance in FY11/12. It is recommended that Riviera Beach make available to its residents the myriad of information regarding landscaping and 'water conservation' practices available through the FYN Florida Friendly Landscaping Program.

PURPOSE

Low Impact Development is defined as," a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning and distributed stormwater management practices that are integrated into a project design" (Integrating LID into Local Codes: A Guidebook for Local Governments, prepared by AHBL for Puget Sound Partnership, Final Draft, November, 2011).

All land development regulations (LDRs) contained within the City of Riviera Beach Code of Ordinances have been reviewed as part of this Summary Report. The purpose of this review was to identify what Low Impact Design (LID) techniques and other innovative planning techniques are adopted and being implemented and to determine what changes may be necessary to reduce stormwater impacts of new development and areas of significant development. A description of innovative planning techniques recommended for possible future inclusion into the City's codes and regulations will be identified, and a description of the plan for implementing proposed changes will be cited.

As discussed in the MS4 Permitting Resource Manual, the City will focus on changes that will promote, or at least not discourage, LIDs such as conveyance swales, pervious surfaces, minimum values for green/open spaces and/or maximum allowances for ground coverage, native landscaping/Florida Yards and Neighborhoods program, irrigation conservation, retention of stormwater runoff, increase in natural hydrology and other innovative LID principles.

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CODES AND LAND DEVELOPMENT REGULATIONS REVIEW

All codes and regulations adopted by the City are contained in the City of Riviera Beach Code of Ordinances. The following Articles and Chapters were deemed relevant to this review and analyzed for purposes of this **Summary Report**. Specific Sections and Subsections within Chapters are referenced in the discussions herein.

- Chapter 8: Health and Sanitation; Article II. Litter
- Chapter 17.5: Solid Waste Management
- Chapter 20: Utilities; Article VIII. Stormwater Management: Utilities
- Chapter 28.5: Stormwater Control
- Chapter 30: Subdivisions
- Chapter 31: Zoning

The *City of Riviera Beach Comprehensive Plan* is also reviewed as part of this analysis. Specifically, the Stormwater Management sub-element of the Infrastructure elemen contains Objectives and Policies regarding stormwater management and stormwater management related issues**.**

LOW IMPACT DESIGN (LID) TECHNIQUES AND PRACTICES

A variety of LIDs are already being employed and implemented by the City of Riviera Beach. An identification and discussion of those techniques/practices are presented below. The ***Status*** of their use and effectiveness are stated and ***Recommendations*** are put forth, where necessary and appropriate, to further implement LIDs in the City

Conveyance Swales

A majority of the streets serving Riviera Beach have curb and gutter systems. The City's Subdivision regulations require that 'curbs and gutters shall be provided on both sides of all streets in all subdivisions and land developments, except in industrial zoned districts' **(Ref. Ch. 30 Subdivisions, Article II. Construction, Improvement and Development Standards, Sec. 30-34 Required improvements, (2) Curbs and gutters of the City of Riviera Beach Code of Ordinances). Article III. Designs Standards, Sec. 30-65 Curb and gutters (a) further requires that, 'Subdivisions and land developments shall have all streets paved and drained, utilizing curb and gutter construction.** The streets without curb and gutter systems are served by *conveyance swales.***'** The City's Florida Friendly Landscape Regulations requires that, '...It shall be the responsibility of all property owners to maintain turf and landscaping which exists in street right-of-way swales and easements adjoining their properties...' **(Ref. Ch. 31 Zoning, Article VIII, Florida Friendly Landscaping Regulations, Sec. 31-607 Maintenance of sidewalk areas as public right-of-way (a) of the Code of Ordinances).** Swale areas could be further regulated and subject to City review and permitting requirements by adopting the following requirements and regulations:

a) No person shall place or plant any vegetative landscape material within the City right-of-way (swale areas abutting public streets) without first obtaining a permit from the City. The following shall be considered in determining whether a permit for vegetative landscape material should be issued:

(1) Interferes with or impairs the City stormwater drainage system;
(2) Creates a safety hazard to vehicular or pedestrian traffic;
(3) Otherwise impairs the health, safety or welfare of the citizens and visitors to the City.

c) No person shall grade or re-grade any lands within the City right-of-way without first obtaining a permit from the appropriate designee of the City.

d) It shall be unlawful for any individual to place or have placed any impervious material including, but not limited to, asphalt, concrete crushed rock, landscape stone, brick pavers or other similar materials within the City right-of-way. This subsection shall not preclude the installation of paved driveways extending from a public roadway to the privately-owned property.

Status: The current policy of requiring property owners to maintain landscaped areas in conveyance swales adjacent to the paved streets has been implemented through enforcement of the regulations cited above.

Recommendation: ***It is recommended that the City consider adopting the additional regulations regarding permits similar to those suggested above. The City should review these regulations during the third year of the current NPDES stormwater permit and take appropriate actions for inclusion in the City of Riviera Beach codes. They could be inserted into the Florida Friendly Landscape Regulations portion of Ch. 31 Zoning.***

Pervious/Impervious Surfaces

The issue of 'pervious and impervious surfaces' is addressed in the City's Code of Ordinances**, Ch. 31 Zoning, Article VIII. Florida Friendly Landscape Regulations.** Definitions for pervious and impervious areas are established as follows:

Pervious paving materials are defined in the Florida Friendly Landscaping Regulations as,'...asphalt, concrete or other highly porous surface with an aggregate base allowing for rapid infiltration of water, thereby reducing runoff and allowing for groundwater recharge. These materials are traditionally used for walkways, driveways and areas with light traffic as a low-impact development technique'.

Impervious area is defined in the Florida Friendly Landscape Regulations as, '...a surface not allowing the passage of air and water to the root system of trees and other vegetation. Runoff is water applied to the soil or landscape that is not absorbed and flows from the area...'

Sec. 31-600 General Provisions (g) of those regulations reference the City's Comprehensive Plan pervious/impervious ratios are established. **Specifically, Policy 1.4.4 under Objective 1.4 Stormwater in the Comprehensive Plan's Infrastructure Element** establishes regulations for maximum impervious coverage as follows:

- Single family zoning districts allow up to 60% impervious coverage;
- Multiple family zoning districts allow up to 70% impervious coverage;
- Commercial zoning districts allow up to 70% impervious coverage;
- Within the Community Redevelopment Area (CRA), alternative stormwater management methods appropriate for urban development such as baffle boxes, exfiltration systems, cistern/ rooftop storage and pervious pavement may be used to slow higher percentages of impervious coverage. Alternative stormwater management systems shall be designed to provide equal or better stormwater storage and treatment and shall be subject to approval by the City Engineer. The downtown zoning districts shall establish maximum lot coverage criteria.

Level of Service (LOS) standards have been adopted in the Comprehensive Plan that provide design standards for the stormwater management system serving Riviera Beach. These LOS standards are established to maximize and control the stormwater runoff from pervious and impervious areas. **Specifically, Policy 1.5.3 Stormwater in the Infrastructure Element of the Comprehensive Plan** establishes the design standards for the stormwater drainage system:

> **Policy 1.5.3 Stormwater.** All new development shall retain on-site the rainfall from a one-year storm that statistically occurs once in 3 years, an amount estimated to be 2.7 inches. Roadway and parking lot finished elevations shall be at or above the peak stage elevation for the 5-year, 1-day storm event. Building ground floor elevations shall be above the 100-year, 3-day storm stage elevation or one foot above the crown of the road, whichever is greater. The stormwater system of new developments shall also be designed to comply with water quantity and quality requirements of the appropriate permitting agency, but post-development runoff shall not exceed pre-development runoff.

Status: The regulations cited above establish limitations to the amount of land area that can be developed as 'impervious areas' in the City of Riviera Beach. Even though the maximum allowable percentages of impervious surfaces are adopted by Policy 1.4.4 Stormwater of the Infrastructure Element of the City of Riviera Beach Comprehensive Plan, they are only referenced in Ch. 31 Zoning, Article VIII. Florida Friendly Landscape Regulations of the Code of Ordinances. The LOS standards adopted for application to stormwater drainage systems within the City maximize control of stormwater runoff from pervious and impervious areas.

<u>Recommendation</u>: It is recommended that a Maximum Impervious Coverage standard be added as another 'Property Development Standard' in each of the zoning districts cited in Policy 1.4.4. of the Infrastructure Element This action will add further clarity in Ch. 31 Zoning of the Code of Ordinances and be consistent with the City of Rivera Beach Comprehensive Plan.

<u>Landscaping/Florida Yards and Neighborhoods Program/Conservation</u>

Article VIII. Florida Friendly Landscape Regulations contained in Ch. 31 Zoning of the City of Riviera Beach Code of Ordinances contain landscaping regulations and concerns about appropriate plant selection, plant materials, standards for the preservation and use of 'native' vegetation, the elimination of exotic vegetation, the protection of certain species, conservation of trees to the maximum extent possible and other LID practices and techniques.

Sec. 31-598 Applicability (b) of the Florida Friendly Landscape Regulations states that, 'This article shall apply to all new residential or nonresidential development or to the expansion, renovation or redevelopment of existing development. Existing single family dwellings and duplexes shall be exempt from the provisions of this chapter with the following exceptions: (1) Maintenance of swales; visibility at intersections; pruning of trees; turf eights, weed maintenance; edging of curbs, sidewalks and roadways; exempt or prohibited plant species; native trees; tree canopy clearance; vegetation removal as it applies to street trees and/or trees required as part of a site and/or landscape plan approval or required to satisfy minimum landscape requirements.'

A review of the **Florida Friendly Landscape Regulations** reveals excellent and necessary minimum standards that are required in a site plan application before a permit can be issued such as ground cover and other landscape treatment, installation and irrigation requirements, preservation of trees on site and maintenance requirements. Specifically, **Sec. 31-601 Appropriate plant selection, location and arrangement (a)** of the Florida Friendly Landscape Regulations states that, 'Plant selection should be based on the plant's adaptability to the existing conditions present, particularly considering hardiness zone, soil type and moisture conditions, light, mature plant size...Native plant species that are drought, wind and/or salt tolerant are preferred...plants that have a high ecological value shall be incorporated into plant selection strategy.' **Sec. 31-601 (b)** further requires that, 'Plants shall be grouped in accordance with their respective water and maintenance needs'. Further, the issue regarding the preservation of native species is addressed in **Sec. 31-604 Standards for the preservation of native vegetation areas.** There are limitations to their application, however. **Sec. 31-604 (a)** states that these standards, '...shall apply to all new developments of five acres or more permitted after approval of this regulation meet the following criteria: (1) Parcels or lots independent of larger developments that are less than five acres in size shall not be subject to these native vegetation preservation set-aside requirements. Tree preservation ordinances and all other landscape requirements shall remain applicable to all developments as described within the landscape regulations.' **Policy 1.4.3 of the Future Land Use Element of the Riviera Beach Comprehensive Plan** recognizes native vegetation as an import natural resource as well. It states, 'The City shall continue to implement the predominance of native vegetation through the Land Development Code'**. GOAL 3. Protection of Native Communities and Ecosystems in the Conservation Element of the City's Comprehensive Plan. Objective 3.5 under the GOAL** addresses invasive non-native plant species and the eradication of those species.

Sec. 31-605 (a) Plant material standards and installation requirements specifically require (1) at least 70 percent of all required landscaping in the form of trees, shrubs, ground cover and grasses shall collectively consist of native vegetation, excluding turf grass. The owner may select site appropriate native vegetation from Appendix B, or from the most current edition of South Florida Water Management District's "Water Wise: South Florida Landscapes" or similar...'; (2) At least 60 percent of all required tress shall consist of a native shade tree species. At least ten percent of all required trees shall consist of a native, accent tree species. Not

more that 20 percent of all required trees shall be of a palm species...; (3) At least 25 percent of all required landscaping shall consist of plant material that is recognized as being ecologically significant...' **Sec. 31-605 (b) Installation** addresses the issue of landscape installation**.** It is emphasized in **Sec. 31-605(b)(1)** that, 'All required landscaping installed pursuant to this landscape code shall be installed according to accepted good planting practices and best management practices identified by the International Society of Arboriculture or similar.

Requirements for the maintenance of landscaping are identified in **Sec. 31-606 Landscape maintenance**. The maintenance of landscape irrigation systems is emphasized to reduce water and energy wastage, and to maintain the integrity of the irrigation system through regular maintenance and repairs. Sec. 31-606 (3) states that, 'Landscape for hire should be performed in accordance with recommendations in the *Florida Green Industries Best Management Practices for Protection of Water Resources in Florida.'* These practices apply to City personnel if performing landscaping installation and maintenance. Also, **Sec. 31-606 (4)** states that, Landscape maintenance by homeowners should be performed in accordance with recommendations of the University of Florida Yards and Neighborhoods publications.

The Palm Beach County (PBC) NPDES Steering Committee developed a model Fertilizer Ordinance, in coordination with FDEP, as part of its MS4 stormwater permitting program. It was developed for use as a guide for adaptation to each co-permittees entity. The City adopted a Fertilizer Ordinance in FY 11/12, referred to above as the Florida Friendly Landscape Regulations contained in Ch. 31 Zoning of the City's Code of Ordinances, which followed this guide. Only those entities whose stormwater runoff discharge into 'nutrient impaired' waters are required to adopt a Fertilizer Ordinance. The City discharges into FDEP WBID 3242 (C-17 Basin/D Canals), 3242A (C17 Basin, portion), WBID 3226W2 (Lake Worth Lagoon/Intracoastal Waterway) a, WBID 3226 E1 (Lake Worth Lagoon, Northern Segment) and 3226 EB (Lake Worth Lagoon). WBID 3226 E-1 is listed as discharging into 'impaired' waters for nutrients (Chloraphyll A) as is WBID 3242A. WBID 3242 is also listed as 'impaired on FDEP lists for DO. WBID 3226 EB is listed as 'impaired' for bacteria. WBID 3226W2 is not listed as discharging into 'impaired' waters.

The Florida Yards and Neighborhoods (FYN) Florida Friendly Landscaping program offers educational and suggested LID practices and principles that will help protect ground water , surface waters and the natural environment. It is important to reduce water usage and runoff and to use plants in landscaping that will flourish on the amount of rainfall received in Palm Beach County. Healthy plants filter runoff and slow erosion. FYN Florida Friendly program offers suggestions on 'water conservation' and as well as suggested materials to slow and clean runoff and to use materials such as mulch to retain water moisture which reduces competition for water between plant species. Other irrigation conservation practices include watering plants and landscaping early in the morning so plants are not wet overnight. This reduces water loss and the chances of disease. The use of rain sensors on irrigation systems are used to turn off irrigation when not in use while using mulch helps to retain soil moisture which reduces competition for water between plant materials.

FYN also encourages the use of less toxic or non-toxic products in controlling and managing pests in landscaped areas, thus reducing or eliminating toxic substances from entering ground or surface waters. FYN has many recommendations regarding the use of fertilizers and how to help contain its use from entering ground and surface waters. The FYN program offers practices such as providing buffer areas between fertilized and lawn cutting areas and a water body. These are just some of the LID Practices and principles offered by the FYN Florida Friendly Landscaping program.

Also, the Town assists the South Florida Water Management District (SFWMD) in the implementation of the District's Water Shortage Plan. **Chapter 26 - Utilities, Division 3. of the Town's Code of Ordinances** was adopted by the Town to provide this assistance. The declaration of this Chapter and Division shall apply to all

persons using the water resource within the Town as determined by the SFWMD. The declaration of a water shortage or water shortage emergency within the Town by the SFWMD shall invoke the these provisions. Water use restrictions adopted by the SFWMD shall be subject to enforcement action **(Ref. Section 26-66 - Water Shortage).**

Status: The landscaping regulations adopted by the City of Riviera Beach have been adequate to monitor and enforce good LID practices, principles and techniques. The City has an adopted a Fertilizer Ordinance.. Applicators are appropriately trained and certified in fertilizer application.

Recommendation: ***It is not necessary to recommend any changes to the City of Riviera Beach existing landscaping regulation at this times. Continued application and enforcement requirements of landscaping regulations shall be maintained. It is recommended that the City provide as much information to its residents (in the form of flyers, brochures, web sites and other available educational aides) to educate its community about the use and application of plant types and materials, use of fertilizers and pesticides, use of 'water conservation' techniques (e.g. pavers, stones, gravel, mulch, rain sensors on irrigation systems and others) and the myriad of useful information provided through the FYN Florida Friendly Landscaping program.***

Refuse, ,Garbage, Toxic Materials and Other Nuisances

The City of Riviera Beach is solely responsible for the collection and transportation of solid wastes from the City to a solid waste facility operated by a County or operated under a contract with a County pursuant to F.S. 403.706, "Local Government Solid Waste Responsibilities" **(Ref. Ch. 17.5 Solid Waste Management, Sec. 17.5-2 Municipal responsibility** in the City of Riviera Beach Code of Ordinances)**. Sec. 17.5-6 Collection by City** further states that, 'All solid waste, recovered materials and recyclable materials accumulated and generated in the City placed out for collection, shall be collected, conveyed and disposed of by the City...'. Further., 'It is unlawful for any person to permit or allow any solid waste material such as debris, trash, rubbish, materials, items or substances to accumulate or remain upon any property located in the City, when the accumulations are deemed a nuisance by the City, constituting a hazard to the health, safety and welfare of the inhabitants of the City' **(Ref. Sec.17.5-11 Accumulations prohibited**. Hazardous and other special wastes are addressed in **Sec. 17.5-14 Special wastes collection and disposal; not included in uniform level of service**. This Section identifies a list of hazardous and special wastes that require special handling. The City performs the collection of these wastes, but collection of these materials is not part of the normal collection and disposal services. It shall be the joint responsibility of owner, occupant and agent to legally dispose of special waste as provided in F.S. Ch. 403...' **(Ref. Sec. 17.5-14 (b).)**

Unless otherwise authorized by law or permit, it is unlawful for any person to dump litter in any manner or amount within the City of Riviera Beach (**Ref. Ch. Health and Sanitation, Sec. 8-17 Dumping litter prohibited** in the City's Code of Ordinances).

The City has its own street sweeper and performs street sweeping activities on a daily basis throughout Riviera Beach. Most of the streets in Riviera Beach have curb and gutters. **Sec. 8-20 Sweeping litter into gutters prohibited** specifically states that, 'No person shall sweep into or deposit in any gutter, street or other public place within the City the accumulation of litter from any building or lot or from any public or private sidewalk or driveway...'. Also, the owner or person in control of any private property shall...maintain the premises free of litter **(Ref. Sec. 8-32 Owner to maintain premises free of litter).**

Status: The City of Riviera Beach is adequately addressing and enforcing appropriate regulations regarding the collection, disposal and containment of garbage, refuse, dust and particulate matter. The collection of toxic and

hazardous materials is not part of the normal services provided by the City. The disposal of hazardous and special wastes is the responsibility of the owner or resident of private property as provided by F.S. Ch. 403 Street sweeping is performed on a regular daily schedule throughout the City.

Recommendation: ***No changes to regulations regarding the collection, disposal and containment practices for garbage, refuse, litter and particulates matter is proposed. The collection toxic and hazardous substances is not part of the normal collection and disposal services of the City. Street sweeping activities could be improved in various ways that should be addressed in the third year of current stormwater permit.***

City of Riviera Beach
(NPDES Stormwater Permitting Program)

'Responses' to Year 1, Cycle 4 Audit Report

(submitted as **Attachment 3** to the City of Riviera Beach, Florida Permit No. FLS000018, Year 2, Cycle 4 Annual NPDES Report)

Prepared by
City of Riviera Beach and JLH Associates
March, 2019

Introduction

The Florida Department of Environmental Protection (FDEP) performed an Audit on the City of Riviera Beach Cycle 4, Year 1 (FY 16/17) Annual NPDES Report on June 7, 2018. In attendance at the Audit were: Michelle Bull, Environmental Consultant (FDEP); representatives from the City of Riviera Beach including Malcolm Sommons Operations Director, Sedrick Clarke, Interim Stormwater Manager and the City Engineer; and, Alan Wertepny, Mock-Roos Engineers and Coordinator of the Palm Beach Countywide Permit No. FLS000018.

As a result of the Audit, it was concluded that the City needed some improvements in their Stormwater Management Program associated with the NPDES Stormwater Permit authorized by the federal Clean Water Act. FDEP discussed the need to have more coordination between City Departments and in gathering information for subsequent annual reports.

The ***Responses*** and ***Additional Information*** provided herein represent those items identified in the Audit that have not been responded to date. The Department of Public Works (DPW) which is charged with administering the City's stormwater permitting program has been re-organized, and responsibilities have been assigned to improve the overall stormwater permitting program. New staff and personnel, however, are on an extreme 'learning curve' regarding the intricacies of the NPDES program. The City has secured a Consultant familiar with the NPDES program to assist the City in improving the reporting, documentation and coordination efforts necessary to improve and implement the program.

The City is taking this opportunity to conduct Inspections of the current stormwater system structural controls in accordance with Standard Operating Procedures (SOPs) established in the Stormwater Management Plan (SWMP). Completed Inspection Forms are provided to demonstrate the City's commitment to improving their NPDES program in the future. Other Additional Information that was listed as a 'Required improvement' in the FDEP Audit are extracted from the Audit and responded to appropriately.

Outstanding Audit Issues

The following items are outstanding issues which have not been addressed previously. They are identified and extracted from the Audit report. **Required improvements** regarding the outstanding issues as identified by FDEP are listed and ***Responses*** to those required improvements are provided. If ***Additional Information*** is required, it is provided in the Appendix to this report.

1) **Part III.A.1: Structural Controls and Stormwater Collection Systems Operations**, identified as Unsatisfactory (Page 2. of Audit)

Required improvements:

- **Within 30 days of the audit report**, confirm the number of outfalls, including for industrial zones. Submit a map and inventory with outfall ID, size and receiving waterbody.

Response: There are five (5) major outfalls in the City's MS4; three (3) which discharge directly into the C-17 Canal and two (2) which discharge into the Lake Worth Lagoon (Intracoastal Waterway). One (1) of the Lake Worth Lagoon outfalls (west side of the ICWW)) accepts stormwater runoff from the Riviera Beach mainland and the other Lake Worth Lagoon outfall (east side of ICWW) accepts stormwater runoff from the Singer Island system. A Map and inventory with outfall ID, size and receiving waterbody will be provided with the Cycle 4, Year 2 (FY 17/18) Annual NPDES Report.

Additional Informational: Inspections of all major outfalls were performed on February 8, 2019 and reported on Inspection Forms (See Appendix).

2) **Part III.A.2: Areas of New Development and Significant Redevelopment**, identified as Unsatisfactory (See Page 3 of Audit).

Required improvements:

- **Within 30 days of the audit report**, submit a revised annual report page to report the number of development projects reviewed and approved in Year 1.

Response: Adequate documentation to report the number of development projects is not available at this time for FY16/17 for reasons cited previously. Measures will be taken to improve documentation methods and reporting procedures for inclusion in Cycle 4, Year 3 (FY 18/19) Annual NPDES Report.

Additional Information: None at this time.

3) **Part III.A.7.g. Illicit Discharges and Improper Disposal - Limitation of Sanitary Sewer Seepage, identified as Unsatisfactory** (See Page 5. of the Audit).

Required improvement:

- **Within 30 days of the audit report**, submit a revised annual report page to include the SSO prevention activities.

Response: The City periodically probes the sanitary sewer system with televised camera equipment. When leekages or damages to the stormwater drainage are discovered, appropriate action is taken to alleviate the problem. No sanitary sewer seepages were documented during the permit year. Measures will be taken to improve documentation me-

thods and reporting procedures for inclusion in the Cycle 4, Year 3 Annual NPDES Report.

***Additional Information*:** None at the present time.

4) **Part III.A. 8.a Industrial and High Risk Runoff - Identification of Priorities and Procedures for Inspections,** identified as Unsatisfactory (See Page 5. of Audit).

Required improvement:

- **Within 30 days of the audit report**, submit a list of the high-risk facilities and inspections. Alternately, submit a plan for developing a list of high-risk facilities and an inspection plan.

Response: The City reported two (2) high risk facilities in their FY 16/17 Annual NPDES Report. The City is aware that an update is necessary to determine a more accurate list of facilities. The alternate plan suggested by the City is to use EPA's 'Multisystem search' at http//www3.epa.gov/enviro/ to update the high risk facilities data. This search identifies 166 high-risk facilities with a Riviera Beach address. This data needs to be reviewed, refined and revised to those facilities located only within the MS4 area. This research and up-to-date list of high risk facilities will be reported in the Cycle 4, Year 3 Annual NPDES Report. Inspection of the high risk facilities will be completed and documented in Cycle 4 annual reports.

Additional Information: None at this time.

5) **Part III.A.8.b: Industrial and High-Risk Runoff - Monitoring for High-Risk Industries,** identified as Unsatisfactory (See Page 5. of the Audit)

Required improvement:

- **Within 30 days of the audit report**, submit a revised annual report page with the number of high risk facilities monitored/sampled.

Response: Same as the ***Response*** to Part III.A..8.a above

Additional Information: None.

6) **Part III.A.9.a: Construction Site Runoff - Site Planning and Non-Structural and Structural Best Management Practices**, identified as Unsatisfactory (See Page 3 and 6 of Audit).

Required improvements:

- **Within 30 days of the audit report,** submit a revised annual report page with the number of permittee and private permit applications reviewed and approved in Year 1.

Response: Adequate documentation to report the number of permittee and private permit applications that were reviewed and approved in FY 16/17 is not available at this time for reasons cited above. Measures will be taken to improve documentation methods and reporting procedures for inclusion in the Cycle 4, Year 3 (FY 18/19) Annual NPDES Report.

***Additional Information*:** None at this time

7) **Part III.A.9.b: Construction Site Runoff - Inspection and Enforcement**, identified as Unsatisfactory (See Page 6 of Audit).

Required improvement:

- **Within 30 days of the audit report**, confirm number of active permittee and private construction sites.

Response: Adequate documentation to report the number of actives permittee and private construction sites is not available for FY 16/17 at this time. Measures will be taken to improve documentation methods and reporting procedures for inclusion in cycle 4, Year 3 (FY 18/19) Annual NPDES Report.

Additional Information: None at this time.

8) **Part III.A.9.c.: Construction Site Runoff - Site Operator Training,** identified as Unsatisfactory (See Page 6. of Audit).

Required improvement:

- **Within 30 days of the audit report,** submit a plan for construction site inspector to attend an Erosion and Sediment Control course and attend annual refresher training, site plan reviewer to attend annual refresher training and train/report operator out-reach (pre-construction site inspection, etc).

Response: An appropriate, qualified staff person or consultant charged with these inspections will attend the next Erosion and Sediment Control course scheduled for May 22 and 23, 2019. On March 20, 2019 four (4) City Public Works personnel attended the MS4 PBC Steering Committee refresher training.

Additional Informational: See PBC Steering Committee website (pbco-npdes.org, Training, attendance log for March 15, 2017 meeting. Malcolm Sommons of the City of Riviera Beach was trained for continued site inspector training. The sign-in sheet verifies his attendance(#41).

Appendix

Major Outfalls

In response to the first outstanding issue cited in this report, five (5) major outfalls have been identified that serve the City of Riviera Beach MS4. All outfalls, adopted in the SWMP, are required to be inspected annually. Therefore, all of the major outfalls were inspected on February 8, 2019 to be submitted with the Cycle 4, Year 3 Annual NPDES Report. It is the City's intent to demonstrate their stated desire to correct past losses and annual report shortcomings with these early submittals. Inspection Forms are prepared with required information and presented herein.

Major Stormwater Outfall RC-5 -Structural Control Inspection

Address and/or Zone/Inspector(s): 72" Concrete Metal Pipe (CMP); located on east side of C-17 Canal, south of Blue Heron Boulevard (most northerly of outfalls discharging into C-17)/Sedrick Clarke Stormwater Manager and Jack Horniman, JLH Associates.

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:

Debris or sediment accumulation in pipe? Yes No

Barnacle accumulation in pipe? Yes No

Sediment accumulation in receiving water Yes No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Signs of erosion on bank near outfall?. Yes No

Rip-rap in need of maintenance? Yes No

Headwall in need of repair/replacement? Yes No

If YES, schedule for maintenance. Not necessary

Major Stormwater Outfall RC-1D -Structural Control Inspection

Address and/or Zone/Inspector(s): 2/60 " CMP**;** located an east side of C-17 Canal, south of Blue Hewron Boulevard (the centrally located outfall discharging into C-17)/Sedrick Clarke Stormwater Manager and Jack Horniman, JLH Associates.

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:

Debris or sediment accumulation in pipe? Yes No

Barnacle accumulation in pipe? Yes No

Sediment accumulation in receiving water Yes No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Signs of erosion on bank near outfall?. Yes No

Rip-rap in need of maintenance? Yes No

Headwall in need of repair/replacement? Yes No

If YES, schedule for maintenance. Not necessary

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Major Stormwater Outfall RC-2C-Structural Control Inspection

Address and/or Zone/Inspector(s): 2/52" CMP**;** located on east side of C-17 Canal, south of Blue Heron Boulevard (southerly most outfall discharging into C-17)/Sedrick Clarke Stormwater Manager and Jack Horniman, JLH Associates.

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:

Debris or sediment accumulation in pipe? Yes No

Barnacle accumulation in pipe? Yes No

Sediment accumulation in receiving water Yes No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Signs of erosion on bank near outfall?. Yes No

Rip-rap in need of maintenance? Yes No

Headwall in need of repair/replacement? Yes No

If YES, schedule for maintenance. Not necessary

Major Stormwater Outfall RC-4-Structural Control Inspection

Address and/or Zone/Inspector(s): 60" CMP; located on west side of Intracoastal Waterway (ICWW), south of Blue Heron bridge at marina/Sedrick Clarke Stormwater Manager and Jack Horniman, JLH Associates.

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:

Debris or sediment accumulation in pipe? Yes No

Barnacle accumulation in pipe? Yes No

Sediment accumulation in receiving water Yes No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Signs of erosion on bank near outfall?. Yes No

Rip-rap in need of maintenance? Yes No

Headwall in need of repair/replacement? Yes No

If YES, schedule for maintenance. Not necessary

Major Stormwater Outfall Singer Island System-Structural Control Inspection

Address and/or Zone/Inspector(s): 60" CMP; located on east side ICWW, south of Blue Heron bridge/Sedrick Clarke Stormwater Manager and Jack Horniman, JLH Associates.

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:

Debris or sediment accumulation in pipe? Yes No

Barnacle accumulation in pipe? Yes No

Sediment accumulation in receiving water Yes No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Signs of erosion on bank near outfall?. Yes No

Rip-rap in need of maintenance? Yes No

Headwall in need of repair/replacement? Yes No

If YES, schedule for maintenance. Not necessary

Other Structural Controls

In addition, other Structural Controls Inspections were performed for inclusion in the FY 18/19 Annual NPDES Report for the same reasons cited for the major outfall inspections. Inspections Forms are prepared as part of this Appendix for the other structural controls identified below.

Pollution Control Boxes: The SWMP establishes that pollution control boxes are to be inspected quarterly during the permit year. There is only one (1) pollution control box and it has been inspected and reported on the appropriate Inspection Form. It should be noted that the weir structure reported herein is a form of pollution control box, but is reported separately.

PCD #1 (Pollution Control Box) -Structural Control Inspection

Address and/or Zone/Inspector(s): _Spillway/Sedrick Clarke Stormwater Manager and Jack Horniman, JLH Associates.

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:
Sediment accumulation? Yes No

Debris accumulation? Yes No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Inlets/Outlets damaged or obstructed. N/A

Weir: The SWMP requires that the weir structure be inspected semi-annually. Their is only one (1) weir structure in the MS4. As stated above, the weir is a form of pollution control box, but is reported separately below.

Control Structure #1-Weir

Address and/or Zone/Inspector(s): _Spillway/Sedrick Clarke Stormwater Manager and Jack Horniman, JLH Associates.

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:
Sediment accumulation? Yes No

Debris accumulation? Yes No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Inlets/Outlets damaged or obstructed. N/A

Pipes/Culverts: The SWMP requires that 10% of all pipes and culverts be reported during the permit year. Therefore, four (4) miles of the total forty (40) miles is required to be reported and inspected annually. Avenues S., R. and J. have been inspected to meet the SWMPP requirement and reported below.

Pipes/Culverts-Structural Control Inspection

Address and/or Zone/Inspector(s): Ave. S (between Silver Beach Road and 15th Street); Ave. R (between Silver Beach Road and Blue Heron Blvd.); Ave. J (between north side of City and south side of City)/Sedrick Clarke Stormwater Manager

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:

Evidence of settling above the pipe alignment?	Yes	No
Sediment accumulation in pipe (viewed from inlets, manholes, etc.)?	Yes	No
Sediment accumulation in pipe (viewed from inlets, manholes, outfalls, etc.)?	Yes	No

If YES, report to supervisor for further investigation. N/A

***Canals*:** The SWMP requires that at least 10% of the canals be inspected annually. Therefore, the RC-4 System was inspected and reported below to provide an example how all systems will be reported in FY 18/19. The remaining RC systems will be reported in subsequent years.

Conveyance (Ditch & Canal) System -Structural Control Inspection

Address and/or Zone/Inspector(s): RC-4/Sedrick Clarke Stormwater Manager & Jack Horniman, JLH Associates

Date: 2/8/19

Inspection conducted 10 days after significant rainfall event

FUNCTION:

Debris or trash present	Yes	No
Sediment accumulation?	Yes	No
Grading issue?	Yes	No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

EROSION:

Vegetation on bottom or side slopes failing?	Yes	No
Any signs of erosion?	Yes	No

If YES, describe and schedule for maintenance. N/A

GENERAL:

Any indications of illicit discharge or illegal dumping? Yes No

If YES, describe and report to supervisor for proper maintenance. N/A

Inlets/Catch Basins/Grates: The SWMP requires that 10% of all inlets/catch basins/grates be inspected during the permit year. Only one (1) inspection and Form are provided below as an example how all of these structures will be reported in subsequent reporting years.

Inlets/Catch Basins/Grates – Structural Control Inspection

Address and/or Zone/Inspector: 15th Street and Ave. R/Sedrick Clarke, Stormwater Manager

Date: 2/8/19

Inspection conducted 10 days after significant rain event.

FUNCTION:

Debris or sediment accumulation in inlet/catch basin/grate?	Yes	No
Barnacle accumulation in inlet/catch basin/grate?	Yes	No
Sediment accumulation in inlet/catch basin/grate?	Yes	No
Evidence of settling of pipe – misalignment?	Yes	No
Inlet/catch basin/grate in need of repair/replacement?	Yes	No

If YES, report to supervisor for further investigation or schedule for maintenance. N/A

ILLICIT DISCHARGE INDICATIONS:

Any indications of illicit discharge or illegal dumping?	Yes	No

If YES, complete Illicit Discharge Inspection Form and submit to supervisor for proper response. N/A

Structural Control Structures Not Reported

Some of the structural controls identified in the City's SWMP and past Annual NPDES Reports are not required to be reported each permit year. The following structural controls that are assigned other than annual, semi-annual, quarterly or minimum percentage reporting and inspection requirements are described below.

Exfiltration Trench/French Drains: Inspections of exfiltration trenches/french drains are only required once every three (3) years. The data, information and documentation needs to be reviewed and updated, as deemed appropriate. Therefore, the next scheduled inspection date and reporting period will be in Cycle 4, Year 3 (FY 18/19) of the permit.

Grass Conveyance Swales: Grass conveyance swales documentation also needs to be updated. They are only required to be inspected and reported once every three (3) years as well. Therefore, they are scheduled for inspections and reporting in the Cycle 4, Year 3 permit.

Wet Detention Systems: Like exfiltration trenches and grass conveyance swales, wet detention systems are required to be reported once every three (3) years. They are scheduled for the next inspection and reporting in Cycle 4, Year 3.