

**Florida Department of Transportation – District 4  
Part V.B Assessment Program Plan  
Palm Beach County NPDES MS4 Permit #FLS000018-004**

**I. Background**

The Florida Department of Transportation – District 4 (FDOT) is a co-permittee on the Palm Beach County Phase I National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit #FLS000018-004. This permit is in its Fourth Term. The Fourth Term permit was issued on September 8, 2016 by the Florida Department of Environmental Protection (FDEP), which has been delegated authority by the US Environmental Protection Agency (EPA) to implement the Clean Water Act NPDES MS4 permits in Florida.

In accordance with Part V.B.2 of the Palm Beach County NPDES MS4 permit, each co-permittee is required to develop and submit to FDEP, within 12 months of permit issuance, their plan for an Assessment Program.

FDOT submits the following Assessment Program Plan for FDEP’s consideration and approval.

**II. Introduction**

The purpose of the Assessment Program is to determine overall effectiveness of the permittee’s Stormwater Management Program (SWMP) in reducing stormwater pollutant loadings from their MS4.

The Assessment Program shall include:

1. A water quality monitoring plan.
2. Pollutant loadings.
3. A description of how the data from either 1 or 2 above will be used to evaluate the permittee’s SWMP’s effectiveness in reducing stormwater pollutant loadings from their MS4.

**III. Water Quality Monitoring Plan**

FDOT will rely on the Palm Beach County approved NPDES Water Quality Monitoring Program conducted by the co-permittees through a Joint Participation Agreement (JPA). There are a total of 43 monitoring sites in nine hydrologic basins (**Table 1**). The core monitoring is conducted at 32 ambient water quality sites in partnership with several agencies including the South Florida Water Management District (SFWMD), the Palm Beach County Department of Environmental Resources Management (ERM) and the Loxahatchee River District (LRD). In addition, data from monitoring conducted by Palm Beach County at 11 sites in a series of five lakes, known as the Chain-of-Lakes, is also included in Palm Beach County water quality assessments.

<b>Table 1</b>							
<b>Water Quality Monitoring Site Locations</b>							
<b>Watershed</b>	<b>Surface Water Classification</b>	<b>Site Designation</b>	<b>Agency</b>	<b>Marine/ Freshwater</b>	<b>Northing</b>	<b>Easting</b>	
C-15	III (Fresh)	31E	ERM	Freshwater	760549.91	916736.89	
		31C	ERM	Freshwater	760879.83	943443.02	
		64 (Lake Eden)	ERM	Freshwater	784471.8	958205.48	
		63 (Lake Ida)	ERM	Freshwater	780408.32	955816.19	
		C15S40	SFWMD	Freshwater	760236	959269.79	
C-16	III (Fresh)	22	ERM	Freshwater	828280.34	957602.68	
		24	ERM	Freshwater	820399.97	957270.7	
		27B	ERM	Freshwater	802276.58	916052.08	
		27A	ERM	Freshwater	802545.25	942880.04	
		68 (Lake Osborne)	ERM	Freshwater	829815.1	959241.37	
		66 (Lake Osborne)	ERM	Freshwater	825364.28	958879.56	
		65 (Lake Osborne)	ERM	Freshwater	817642.36	957294.06	
		C16S41	SFWMD	Freshwater	802739.87	964316.28	
C-17	III (Fresh)	12A	ERM	Freshwater	882520.57	953672.56	
		C17S44	SFWMD	Freshwater	903830.19	955552.7	
C-18	I (Fresh)	16	ERM	Freshwater	923477.26	902076.42	
		15	ERM	Freshwater	901986.07	931378.31	
C-51	III (Fresh)	38B	ERM	Freshwater	854963.27	867962.99	
		37B	ERM	Freshwater	853637.29	916592.84	
		57 (Stub Canal)	ERM	Freshwater	857791.27	959379.72	
		70 (Pine Lake)	ERM	Freshwater	854633.78	959084.73	
		52 (Stub Canal)	ERM	Freshwater	852487.66	959528.86	
		62 (Lake Clarke)	ERM	Freshwater	844522.12	959176.55	
		69 (Lake Clarke)	ERM	Freshwater	843444.9	958301.48	
		61 (Lake Clarke)	ERM	Freshwater	836624.16	958301.41	
Lox	III (Fresh)	69	LRD	Freshwater	947071.77	924822.4	
		30	LRD	Marine	961625.76	961625.76	
	III (Marine)	51	LRD	Marine	954939.97	948224.55	
		62	LRD	Marine	949558.67	942243.82	
	II	72	LRD	Marine	946223.78	954573.37	
		I (Fresh)	C18G92	SFWMD	Freshwater	937389.78	924697.78
	C18S46		SFWMD	Freshwater	946198.14	935782.17	
	LWL-N	III (Marine)	LWL-1	ERM	Marine	913398.12	964095.22
			11	ERM	Marine	908969.28	962655.71
			13	ERM	Marine	900706.79	964049.58
LWL-4			ERM	Marine	898346.674	970040.357	
LWL-C	III (Marine)	LWL-8	ERM	Marine	856238.635	968284.926	
		18C	ERM	Marine	839740.15	969747.03	
		18D	ERM	Marine	835593.23	967942.19	
		LWL-11	ERM	Marine	830580.53	967926.64	
		LWL-13	ERM	Marine	819086.28	968516.09	
LWL-S	III (Marine)	LWL-18	ERM	Marine	798402.11	965585.04	

adopted from PB Co Cycle 3-Year 3 Water Quality Monitoring Program

The water quality parameters and frequency being monitored by SFWMD, ERM and LRD are provided on **Table 2**.

<b>Table 2 Parameter Collection Schedule</b>					
<b>Parameter</b>	<b>ERM</b>			<b>DISTRICT</b>	<b>Loxahatchee River District</b>
	<b>Freshwater</b>	<b>Marine</b>	<b>Chain-of Lakes</b>		
Alkalinity*	--	--	--	M	M
Arsenic	BM	Q	--	--	--
Cadmium	BM	Q	--	--	--
Chlorophyll-a (corrected)	BM	M	BM	--	M
Copper	BM	Q	--	--	--
Dissolved Oxygen	BM	M	BM	M	M
Fecal Coliform	--	--	BM	--	M
Lead	BM	Q	--	--	--
Nitrogen, Ammonia	BM	M	BM	M	M
Nitrogen, Nitrate-Nitrite	BM	M	BM	M	M
Nitrogen, Total Kjeldahl	BM	M	BM	M	M
pH	BM	M	BM	M	M
Phosphorus, Orthophosphate	BM	M	BM	M	M
Phosphorus, Total	BM	M	BM	M	M
Salinity†	--	M	--	--	M
Specific Conductivity	BM	M	BM	M	M
Temperature	BM	M	BM	M	M
Total Hardness (as CaCO3)*	BM	--	--	Q	--
Total Suspended Solids*	BM	--	BM	M	M
Turbidity	BM	M	BM	M	M
Zinc*	BM	Q	--	--	--
Notes:					
1. Not all parameters are collected for every site.					
2. Loxahatchee River District Sites 62, 69, and 72, are sampled monthly. Sites 30, 69, and 51 bi-monthly.					
M = Monthly					
Q = Quarterly BM (Bi-Monthly)					
BM (Bi-Monthly)					
-- = Note Sampled					
adopted from PB Co Cycle 3-Year 3 Water Quality Monitoring Program					

FDOT has right of way and major outfalls in each of the basins; however, FDOT's ROW in each of the basins is less than five percent (**Table 3**). Therefore, due to the many sources in addition to the FDOT MS4 that may contribute pollutants to a receiving water (i.e., atmospheric deposition, groundwater, non-point sources such as septic and agricultural processes, internal loading, other permitted MS4s, and non-permitted sources), FDOT cannot rely on ambient water quality monitoring as a primary indicator of the effectiveness of the Department's SWMP in reducing pollutant loads to receiving waters. However, FDOT will continue to track the results of the Palm Beach County water quality monitoring program to evaluate trends in water quality.

<b>Table 3</b>			
<b>FDOT Metrics by Basin</b>			
<b>Watershed Monitored by PB County</b>	<b>Total Watershed Acres</b>	<b>% FDOT ROW in Watershed</b>	<b>State Roads in Watershed</b>
C-15	38,101	2%	Atlantic Ave, SR 7, I-95, SR 5
C-16	43,247	2%	Boynton Beach Blvd, Dixie Hwy, Congress Ave, I-95, SR 5
C-17	23,712	4%	Blue Heron Blvd, SR 710, Military Trail, I-95, A1A
C-18	66,498	1%	SR 710, PGA Blvd, Indiantown Rd, I-95
C-51	108,705	2%	Southern, Lake Worth Rd, Forest Hill, Okeechobee Blvd, SR 7, Military Trail, Congress Ave, SR 9, SR 5
Lox	28,105	1%	SR 710, I-95, SR 5, A1A, Indiantown Rd
LWL-N	24,357	3%	A1A, Northlake, PGA, I-95, SR 5
LWL-C	18,199	2%	Boynton Beach Blvd, Lake Ave, Forest Hill, Southern, Okeechobee Blvd, SR 5, A1A
LWL-S	9,575	4%	Glades, Yamato, Atlantic Ave, Boynton Beach Blvd, SR 5, A1A

PB County = Palm Beach County

ROW = FDOT right of way

SR = State Road

Total Watershed Acres based on 2017 GIS Watershed Basin layer received from Mock Roos

#### **IV. Pollutant Load Analysis**

FDOT will use land-use-based pollutant loading estimates to evaluate the effectiveness of their SWMP. The pollutant load analysis gives a more refined look at the FDOT system, and what FDOT is doing to reduce stormwater pollutant loadings in their MS4. The pollutant load analysis will also take into account the various structural and non-structural best management practices (BMPs) such as stormwater treatment facilities, fertilizer reduction, street sweeping, education, and illicit discharge programs implemented by FDOT.

#### **V. Assessment Program Approach**

Each year FDOT will calculate their pollutant loads and load reductions. The pollutant load reductions will be estimated based on the BMPs that have been put in place within FDOT's MS4 contributing area, and will include load reductions from both structural and non-structural BMPs.

FDOT will use the annual pollutant load estimates to evaluate trends in pollutant loading, and identify portions of the MS4 that can be targeted for loading reduction, which can include both structural and non-structural elements.

In addition to monitoring trends, FDOT will continue to assess their SWMP to identify elements and/or areas in which there are opportunities for additional pollutant loading reductions, corrective actions or better documentation.