



MS4 Permit No. FL000018-004
Part V – Monitoring Requirements
Sub-part A. – Assessment Plan

Assessment Program Objective

The purpose of this assessment program is to provide information for the Town of Lake Park to determine the overall effectiveness of its Stormwater Management Program (SWMP) in reducing stormwater pollutant loadings from its Municipal Storm Sewer System (MS4) to receiving water bodies.

Assessment Program Components

As required by the MS4 Permit, the following components make up this Assessment Program:

1. Water Quality Monitoring Plan – The Town will utilize a DEP approved lab using DEP procedures to perform quarterly sampling at four locations for five test parameters, including Chlorophyll-A, Dissolved Oxygen (DO), Total Phosphorus (TP), Total Nitrogen (TN), and Total Suspended Solids (TSS).
2. Pollutant Loading Analysis – As a co-permittee, the Town of Lake Park uses the ambient water quality data obtained through the Palm Beach County NPDES program, where the Northern Palm Beach County Improvement District is the Lead Permittee. Nutrient loads will be evaluated for trends as a result of the Town's Stormwater Management Programs, which include street sweeping, litter control, etc.
3. Effectiveness Analysis – The water quality monitoring data will be analyzed to evaluate and determine if the Town's Stormwater programs are reducing pollutant loading.

Water Quality Monitoring Plan – Component 1

Utilizing DEP approved lab Pace Laboratories, sampling at four locations will take place four times per year for five test parameters, including Chlorophyll-A, Dissolved Oxygen (DO), Total Phosphorus (TP), Total Nitrogen (TN), and Total Suspended Solids (TSS). Samples will be obtained within three hours of a rain event of 0.75 inches or greater. The test locations are as follows:

Location 1 (Representative of Residential District)

148 Data Palm Drive – Basin 12, Structure #103. Google Earth: 26°47'41.25"N, 80°3'22.30W
Samples pulled from 60" RCP outflow that leads to Lake Worth Lagoon

Location 2 (Representative of Residential and Business District/State Highway)

301 Federal Hwy – Basin 12, Structure #131A. Google Earth: 26°47'41.93"N, 80°3'13.85"W
Samples pulled from 60" RCP outflow to Lake Worth Lagoon

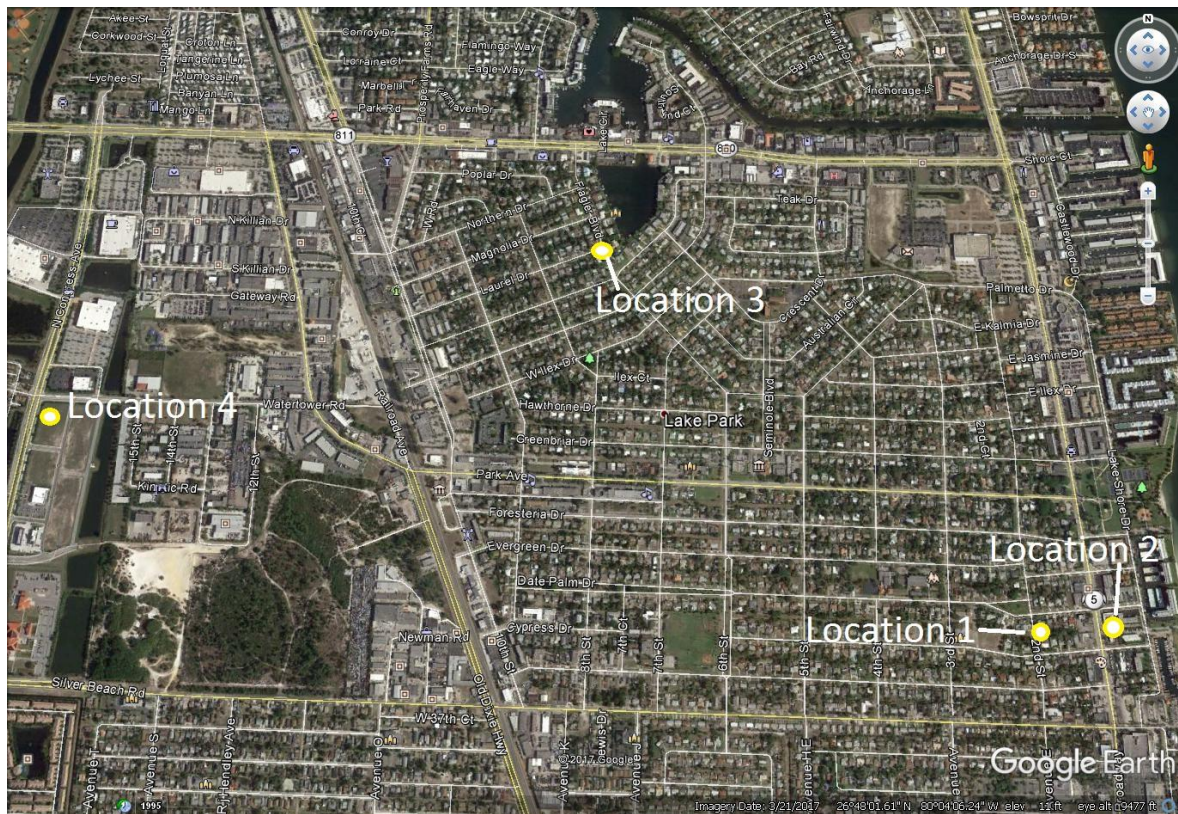
Location 3 (Representative of Residential District)

1406 Flagler Blvd – Basin 15, Structure #35A. Google Earth: 26°48'17.43"N, 80°4'5.63"W
Samples pulled from 36" RCP outflow to South Lake

Location 4 (Representative of Campus Light Industrial and Commercial)

Intersection of Congress Ave. and Watertower Road (Southeast Corner) – Basin 26, Structure unnamed. Google Earth: 26°48'1.67"N, 80°5'4.21W.
Samples pulled from 96" RCP outflow to SFWMD C-17

Locations Map:



Pollutant Loading Analysis – Component 2

The Palm Beach County MS4 permittee group will be developing pollutant loading estimates during the 3rd year of this permit cycle, using the SIMPLE protocol. In order to provide each permittee with pollutant loading estimates that reflect their respective MS4 areas, the group effort will provide the loading estimates “by MS4,” in addition to “by watershed” (as was

done in past permit cycles). Prior to Year 3, the Town of Lake Park will participate in this effort by reviewing its MS4 contributing areas to each receiving water. In addition, any water quality best management practices (BMPs) that are in place within the MS4 area, will be identified...

In accordance with the MS4 Permit, pollutant load estimates for the following parameters must be developed once during each permit cycle: Chlorophyll-A, Dissolved Oxygen (DO), Total Phosphorus (TP), Total Nitrogen (TN), and Total Suspended Solids (TSS).

The EMC values to be used in the Cycle 4 pollutant loading estimates are the same as those used in Cycle 3. This will provide consistency in comparing data to previous estimates.

The EMC values used in the Cycle 3 pollutant loading estimates were taken from the 2012 City of Lake Worth Stormwater Master Plan completed by CDM Smith, because the values were determined to be representative of all of the Palm Beach County MS4s. CDM Smith chose EMC values appropriate for each land use category, from sources including NPDES data, Harvey Harper’s studies, and NURP studies.

**Event Mean Concentrations
(mg/l)**

Land Use	% DCIA	BOD5	TN	TP	TSS
Agriculture/Pasture	1	3.8	1.86	0.430	43.2
Forest/Open	0	17.0	2.20	0.430	94.0
Cropland	1	11.0	1.27	0.350	64.0
Single-Family, Low Density	5	17.0	2.20	0.430	94.0
Single-Family, Medium	25	13.0	0.71	0.210	16.0
Single-Family, High Density	50	10.0	1.18	0.280	21.0
Industrial, Heavy	90	7.0	1.64	0.340	26.0
Industrial, Light/Office	60	12.0	1.90	0.450	74.0
Commercial	75	3.0	1.18	0.020	11.0
Highway, Major	75	5.2	1.10	0.200	46.0
Wetlands	25	3.8	1.86	0.430	43.2
Water	25	3.0	1.18	0.020	11.0

A recent evaluation of DCIA values within Palm Beach County was completed by CDM Smith in November 2012 for the City of Lake Worth Stormwater Master Plan. The DCIA values developed for that effort are reasonably believed to be more representative of Palm Beach County than national data, and therefore, have been used for this effort.

Land Use	% DCIA
Agriculture/Pasture	1
Forest/Open	0
Cropland	1
Single-Family, Low Density	5
Single-Family, Medium Density	25
Single-Family, High Density	50
Industrial, Heavy	90
Industrial, Light/Office	60
Commercial	75
Highway, Major	75
Wetlands	25
Water	25

The group's estimated pollutant loading results will be provided to each permittee for use in this assessment effort.

To determine a practical estimate of the current pollutant loading, the Town of Lake Park will use the land use based pollutant loading estimates provided by the group as the starting point from which pollutant load reductions will be subtracted. The pollutant load reductions will be estimated based on the BMPs that have been put in place within the MS4 contributing areas. In this way, when future estimates are done, and potentially additional reduction measures or BMPs are put in place, the estimated pollutant loading will reflect the reductions.

Effectiveness Analysis – Component 3

For each subsequent year of the permit cycle, an evaluation will be conducted to determine if the Town's Stormwater Management Plan Operations are reducing pollutant loading. Data will be graphed for trend identification, and such graphs will be included in the group's Joint Annual Report. The pollutant loading estimates developed during Year 3 of the permit cycle will be reviewed and adjusted based on the Town's Stormwater Management Programs (litter control, public education, etc.) as appropriate. Based on the two assessments, a determination of the effectiveness of the Town's program will be made.