



**Senate Bill 712**

**House Bill 1343**

**Section 5, Ch. 2020-150,  
L.O.F.**

**Introductory Stormwater  
Rulemaking Presentation  
and Outreach**





# **Request for Stakeholder Input**

**This an introductory presentation and outreach. We want to encourage input from all stakeholders even before initiating the statewide stormwater rulemaking. Please submit all initial comments, information, and/or ideas ahead of our beginning rule development to**

**Stormwater2020@floridadep.gov, by 10/01/2020**

**Rule Development Workshops will be held later following the initiation of Rule Development.**





# **SB-712**

## **Section 5**

**During the 2020 Legislative session, the House and Senate approved a Clean Waterways Act bill, which was signed by the Governor, Ron DeSantis, on June 30, 2020. The bill was adopted as Chapter 2020-150, L.O.F.**

**This legislation had many directions for improving water quality. This presentation only addresses the Section 5, stormwater rulemaking portion of this legislation.**

**The legislation directs the Department of Environmental Protection to initiate rulemaking by January 1, 2021, to improve the existing regulations pertaining to stormwater. We will provide a short historical synopsis, progress to a discussion on research, share priorities and request input on updating the regulations.**



# Presentation Topics

## General Topics:

### 1. Stormwater Rule Background

- a. History
- b. Applicable Rules and Standards
- c. BMPs and Treatment Efficiencies

### 2. Legislative Direction, Research and New Technologies

- a. SB 712 Direction and Expectations
- b. Technologies, Treatment, and Results
- c. Example Research and Projects

### 3. Special Considerations, SB 712 Direction Reiterated, and Next Steps

- a. OFWs, Nutrients, and other Special Considerations
- b. 10-2 and SB 712 Direction Reiterated
- c. Next Steps



# **Rules Historic Summary**

## **Stormwater Rule Development**

- **1979 17-4.248, F.A.C.**
- **1982 Chapter 17-25, F.A.C.**
- **1994 Chapter 62-25, F.A.C.**
- **2000 NPDES – National Pollutant Discharge Elimination System**
- **ERP Rules via WMD's**
- **Local Government Stormwater Permitting**
- **2013 Chapter 62-330 (SWERP)**





# Rule 62-25.001, F.A.C., Scope

(1) The discharge of untreated stormwater may reasonably be expected to be a source of pollution of waters of the state and is, therefore, subject to Department regulation. The Department shall prevent pollution of waters of the state by discharges of stormwater, to ensure that the designated most beneficial uses of waters, as prescribed by Chapter 62-302, F.A.C., are protected.

(2) A permit under this chapter will be required only for new stormwater discharge facilities as defined herein. This provision shall not affect the Department's authority to require appropriate corrective action, pursuant to Sections 403.121-.161, F.S., whenever existing facilities cause or contribute to violations of state water quality standards.

(3) Stormwater discharges to groundwaters shall be regulated under the provisions of Chapters 62-520 and 62-522, F.A.C., and other applicable rules of the Department.

(4) The Department intends that, to the greatest extent practicable, the provisions of this chapter be delegated to either local governments or water management districts seeking such delegation.

*Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History—Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84, Formerly 17-25.01, 17-25.001.*



# **STORMWATER SYSTEM DESIGN STANDARDS OUTLINED IN CHAPTER 62-25, F.A.C.**

## **STORMWATER SYSTEM TYPE DESIGN PARAMETER CRITERIA**

- **Retention Treatment Volume Runoff from the first 1" of rainfall; or as an option, for projects < 100 ac, 0.5" of runoff Volume Recovery < 72 hours following storm using percolation, evaporation, or evapotranspiration.**
- **Swales Treatment Volume Percolate 80% of the runoff from a 3-year/1-hour storm within 72 hours following storm Volume Recovery < 72 hours following storm using percolation, evaporation, or evapotranspiration.**
- **Dry Detention Treatment Volume Runoff from the first 1" of rainfall; or as an option, for projects < 100 ac, 0.5" of runoff Volume Recovery < 72 hours following storm.**
- **Filter Systems (if applicable) Filter Design Permeability surrounding soil Media washed with <1% silt, clay, and organic matter Media uniformity coefficient > 1.5 Effective grain size from 0.20-0.55 mm Designed with safety factor of 2.**
- **Wet Detention1 Treatment Volume 1.00" of runoff Volume Recovery <50% in 60 hours following storm Detention Time Minimum 14 days Littoral Zone Minimum 30% of pond area Pond Depth Maximum 8-10 ft below control elevation Fencing Required for wet ponds unless side slopes are less than 4:1.**
- **Exemptions: Facilities designed to accommodate only one single-family dwelling unit, duplex, triplex, or quadruplex, provided the single unit, duplex, triplex, or quadruplex is not part of a larger common plan of development or sale. Facilities which are designed to serve single-family residential projects, including duplexes, triplexes, and quadruplexes, of less than 10 acres total land area and which have less than 2 acres impervious surface. Stormwater discharge facilities whose functioning treatment components consist entirely of swales. Facilities which discharge into a regional stormwater discharge facility. Facilities for agricultural lands, provided those facilities are part of an approved Conservation Plan Facilities for silvicultural lands, provided that the facilities are constructed and operated in accordance with the Silviculture Best Management Practices Manual (1979)**





# NPDES Stormwater Program

**The National Pollutant Discharge Elimination System (NPDES) Program is required by Section 402 of the Clean Water Act (CWA). Congress amended the CWA in 1987 which required EPA to develop requirements for stormwater discharges**

**Phase I (1990): regulate medium and large MS4s, large construction sites and industrial activities**

**Phase II (1999): regulate small MS4s and small construction sites**

**In 2000, EPA authorized the Florida Department of Environmental Protection (DEP) to implement the NPDES Stormwater Program in the State of Florida (in all areas except Indian Country lands).**







# Florida Water Resource Implementation Rule Chapter 62-40, F.A.C.

- Requirements for stormwater management in Florida are outlined in Rule 62-40.432, F.A.C.
- FDEP is responsible for coordinating the statewide stormwater management program by establishing goals, objectives and guidance for the development and implementation of stormwater management programs by the Districts and local governments.
- The WMD's shall be the chief administrators of the state stormwater management program. The Department shall implement the state's stormwater management program in Districts that do not have the economic and technical resources to implement a comprehensive surface water management program.

## Minimum Stormwater Treatment Performance Standards:

- Achieve at least 80 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards.
- Achieve at least 95 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards in Outstanding Florida Waters.





# Florida Water Resource Implementation Rule

## Chapter 62-40, F.A.C.

- Individual Districts develop specific design criteria for stormwater BMPs
- Every District has a different set of standards
- Design criteria vary widely throughout the State
- Performance efficiencies also vary widely
- Rebuttable presumption that the discharge from such systems will comply with state water quality standards
- During the mid 2000s, FDEP began consideration of a Statewide Stormwater Rule to unify design criteria and effectiveness throughout the State





# Statewide Stormwater Rule History

- **The Department of Environmental Protection (Department) together with the state's five water management districts, have begun rule development on a statewide stormwater rule that will focus on providing increased protection of our State's surface and ground waters. Currently, excess nutrients represent the leading cause of impairment in our surface water bodies. Additionally, increasing nitrogen concentrations in ground water and springs are a growing concern. Therefore, it is critically important that stormwater treatment standards are enhanced to provide for increased levels of nutrient removal and better protection of ground water. Further, a statewide regulation will provide consistent best management practice (BMP) design criteria throughout the state.**
- **The original "statewide" stormwater rule, Chapter 17-25, F.A.C., was adopted by the Environmental Regulation Commission in October 1981 with an effective date of February 1982. This rule was the successor to the state's first stormwater treatment regulations established in Rule 17-4.248, F.A.C., as an interim regulation. When adopted in 1982, performance standard for stormwater treatment was set to 80% average annual load reduction of Total Suspended Solids. BMP design criteria were established, based on Florida field data, which provided a rebuttable presumption that the stormwater discharge did not cause harm to water resources. Although originally implemented statewide by the Department, authority for the Chapter 17-25, F.A.C., stormwater permitting program was delegated to each of the water management districts (excepting the NFWMD) in the mid-1980s.**





# Statewide Stormwater Rule History

- In the mid-1990s, the Environmental Reorganization Act provided the water management districts independent authority under Chapter 373, F.S., to regulate stormwater quality under the Environmental Resource Permit program. Accordingly, each of the WMDs promulgated their own stormwater rules. The resultant BMP design criteria adopted by each of the WMDs varied widely, ranging from essentially the same criteria found in Chapter 17-25 (now Chapter 62-25, F.A.C.) to criteria that provided both higher and lesser degrees of treatment.
- Additionally, in 1990, the State Water Implementation Rule, Chapter 62-40, F.A.C. was developed and adopted in response to stormwater legislation in 1989. The stormwater program's institutional foundation, goals, and performance standards were clearly set forth in this rule. The stormwater treatment performance standard was revised to read "80% average annual load reduction of pollutants that cause or contribute to violations of water quality standards." While amended from time to time to respond to BMP monitoring results, most of the State's stormwater criteria are based on data predating 1995 and they were never changed to meet the new performance standard. More recently, with the implementation of Florida's Total Maximum Daily Load/watershed restoration program and the Springs Initiative, it has become increasingly clear that increased removal of nutrients from stormwater is critical to protecting Florida's surface and ground waters. Further, research has indicated that current design and performance criteria do not properly address nutrient loadings resulting from typical stormwater runoff conditions.

# Pre-SWERP

## Water Management Districts

## Department

### *Panhandle:*



62-346, and Applicant's Handbook (Applies to both NFWMD and DEP)

### *Rest of the state:*



40B-1, 40B-4, 40B-400, and Applicant's Handbook



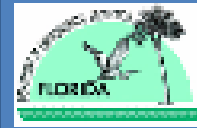
40C-1, 40C-4, 40C-40, 40C-42, 40C-400, and 2 Applicant Handbooks



40D-1, 40D-4, 40D-40, 40D-400, and Basis of Review



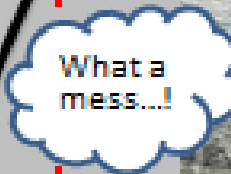
40E-1, 40E-4, 40E-40, 40E-400, and Basis of Review



62-330 (incorporates WMD rules)



62-343 (DEP-specific ERP rules)





# Post-SWERP

*Statewide:*



62-330, and Applicant's Handbook, Volume 1



*In WMDs*



AH Volume 2



AH Volume 2



AH Volume 2



AH Volume 2



AH Volume 2



# ERP Program

## Chapter 62-330, F.A.C.

### Environmental Resource Permitting

- State-level regulatory program established under Florida Law (Chapter 403 and Part IV of Chapter 373, F.S.).
- Established in 1995 from merger prior MSSW and Dredge and Fill programs.
- Functionally “linked” with management of state-owned (“sovereignty”) submerged lands, including Aquatic Preserves (under Chapters 253 & 258, F.S.).
- Incorporates review of water quality certification (under s. 401 CWA) and coastal zone consistency concurrence (under FCMP) – needed by USACE.
- Robust and comprehensive program.
- Jointly implemented by DEP, WMDs and delegated programs.





# Purpose of ERP Program

**Broadly, to protect Florida's water resources:**

- **Water Quality**
  - Ensure compliance with water quality standards
- **Water Quantity**
  - Prevent adverse flooding and drainage
  - MFL's
- **Environmental Functions**
  - Preserve fish & wildlife habitat functions
  - Protect threatened & endangered species





# ERP Stormwater Basics

## Key elements of ERP stormwater:

- **Systems designed (and built) in accordance w/rules receive “rebuttable presumption: of compliance w/WQ standards.**
- **Each WMD establishes treatment and attenuation criteria (including special basins) within its boundaries (Volume II’s).**
- **Performance-based design requirements (e.g. 80/95% TSS removal).**
- **Common elements (1” vs. ½”, +50%, 72 hours, 25/24, pre- vs. post-, etc.).**
- **Typical designs are “dry” retention or “wet” detention, with differing criteria for each.**
- **Less-common designs include RIBs, exfiltration, swales, etc.**
- **Novel designs may be reviewed, if they provide reasonable assurance...**





# BMP Efficiencies

## Estimated Removal Efficiencies (% Load Reductions)

TYPE OF BMP	TN	TP	TSS	BOD
0.50" VOLUME, Dry Retention	80	80	80	80
0.75" VOLUME, Dry Retention	90	90	90	90
1.00" VOLUME, Dry Retention	95	95	95	95
1.25" VOLUME, Dry Retention	98	98	98	98
OFF-LINE RET/DET	60	85	90	80
WET RETENTION	40	50	85	40
WET DETENTION	40	65	90	65
WET DET/FILTER	0-10	50	85	75
DRY DETENTION	10-20	20-40	40-60	30-50
DRY DET/FILTER	0-20	0-20	40-60	0-50
ALUM INJECTION	50	>90	>95	60

DATA SOURCE: Livingston & Harper



# Intersection of Ch. 2020-150, L.O.F., and Technology

## Stormwater Runoff – Quality and Quantity

**“The performance efficiency and effectiveness of stormwater treatment systems are closely linked to the quantity and quality of the generated stormwater stream”**

- **Performance Efficiency of Stormwater Management System:**
  - **Available Data - Stormwater studies conducted within the State of Florida as part of research projects, monitoring requirements, retrofit projects, and etc.**
  - **In spite of available research, many stormwater management systems are selected based upon the system to function hydraulically versus effectiveness of pollutant removal.**





# Ch. 2020-150, L.O.F.

## Section 5, adds s. 373.4131(6), F.S

### New Paragraph (a) in subsection (6) in s. 373.4131, F.S.

**(6) By January 1, 2021:**

**(a) The department and the water management districts shall initiate rulemaking to update the stormwater design and operation regulations, including updates to the Environmental Resource Permit Applicant's Handbook, using the most recent scientific information available. As part of rule development, the department shall consider and address low-impact design best management practices and design criteria that increase the removal of nutrients from stormwater discharges, and measures for consistent application of the net improvement performance standard to ensure significant reductions of any pollutant loadings to a waterbody.**



# Ch. 2020-150, L.O.F.

Section 5, adds s. 373.4131(6), F.S

## New Paragraph (b) in subsection (6) in s. 373.4131, F.S.

**(b) The department shall review and evaluate permits and inspection data by those entities that submit a self-certification under s. 403.814(12) for compliance with state water quality standards and provide the Legislature with recommendations for improvements to the self-certification process, including, but not limited to, additional staff resources for department review of portions of the process where high-priority water quality issues justify such action.**





# Modernization of Removal Efficiencies

## State of Florida Research Project Examples:

- **Evaluation of Current Stormwater Design Criteria within the State of Florida**
  - **2007 Report Contracted by the FDEP and prepared by the Environmental Research & Design, Inc. “Harper Methodology”**
  - **The Report did not include evaluation of alternative stormwater management techniques:**
    - **Low Impact Design (LID)**
    - **Gross Pollutant Separators**
    - **Pervious Pavement**
  - **The Report also did not evaluate Wetland Loadings**



# Modernization of Removal Efficiencies

- **University of Florida SHED Research:**
  - **Based upon protecting water resources from increases in stormwater runoff and pollutant exports.**
  - **Research informs policy and engineering design implementation of Low-Impact Development (LID) and Green Stormwater Infrastructure (GSI).**
- **University of Central Florida Stormwater Academy:**
  - **BMP Trains**
    - **Program utilized to assess the average annual effectiveness of stormwater Best Management Practices**
  - **Innovative and Integrative Best Management Practices for Surface and Groundwater Projects**
    - **Research based upon the development of new BMPs for varying geological conditions and landscapes**





# BMP Technology Examples

- **Low Impact Development (LID)**
- **Pervious Pavement**
- **Green Roof & Cistern Systems**
- **Constructed Wetland & Marsh Systems**
- **Gross Pollutant Separators**
- **Trickling Filters used for Stormwater Treatment**
  - **Naples Airport Project**



# Low Impact Development (LID)

The purpose of Low Impact Development is to mimic the natural water cycle of the landscape, reducing the negative impacts of storm water runoff pollution on streams and rivers. LID includes the following five basic strategies, with multiple techniques for each strategy:

- **Conserve resources.** At the watershed, subdivision, project, and individual lot level, retain natural resources (trees, water, wetlands), drainage patterns, topography and soils whenever possible.
- **Minimize impact.** At all levels, attempt to minimize the impact of construction and development on natural hydrologic cycles and ecological systems by conserving native vegetation, reducing grading and clearing, and decreasing impervious surfaces.
- **Optimize water infiltration.** To the maximum extent practicable, slow runoff and encourage more infiltration and contact time with the landscape by retaining natural drainage patterns, reducing channelization, using vegetative swales, lengthening flow paths and flattening slopes.
- **Create areas for local storage and treatment.** Rather than centralizing stormwater storage, distribute storage across the landscape, adjacent to areas of flow. Use small-scale best management practices (BMPs) such as rain gardens and swales which allow for collection, retention, storage, infiltration, and filtering on-site.
- **Build capacity for maintenance.** Develop reliable, long term maintenance programs with clear and enforceable guidelines. Educate homeowners, management companies, and local government staff on the operation and maintenance all practices, and about protecting water quality.

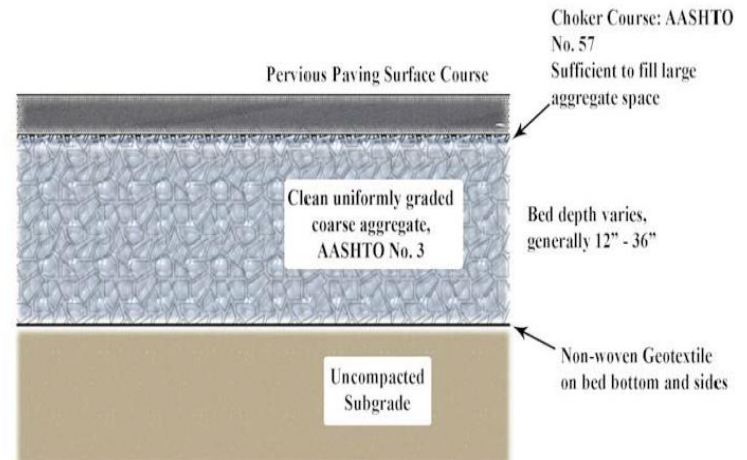




# Pervious Pavement

## Pervious Pavements:

- **Constructed of a permeable surface course underlain by a uniformly-graded stone bed.**
- **Assists in Peak Rate Control**
- **Routine maintenance required to maximize infiltration**
- **2007 DOT Report:**
  - **found that infiltration rates for pervious pavement likely exceed that of parent earth sub-soils.**
  - **Conditional Stormwater Management Credit award based upon site conditions.**

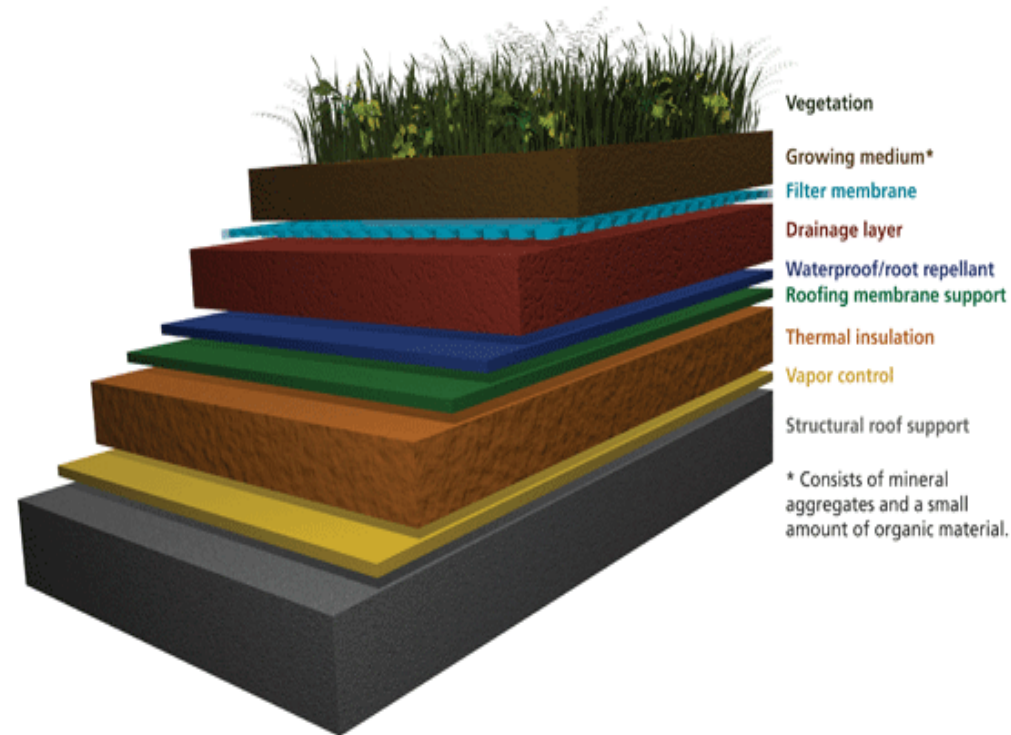




# Green Roof and Cistern Systems

## Green Roofs:

- **Reduce impervious coverage.**
- **Provides stormwater volume and rate control**
- **Have shown to significantly reduce NPS pollutant discharges.**
- **Increase Roof Lifespan (40+ years)**
- **Reduction of heating/cooling cost by approximately 25~50%**
- **Design consideration must be made for hurricane force winds in Florida and maintenance**







# Cistern Systems

**Green Roofs should be coupled with a Cistern to collect and recycle runoff for roof irrigation**







# Lake Jackson Stormwater Management System





# Constructed Wetlands

## Constructed Wetlands:

### Freedom Park Study:

- **Study conducted in Naples Florida from March 2016 – February 2017**
- **The constructed wetland was tested for TP, TN, and Turbidity.**
- **Additional samples collected every six hours through and after a series of major storm events.**
- **The study found the wetlands to decrease TP 55% and TN 26%**



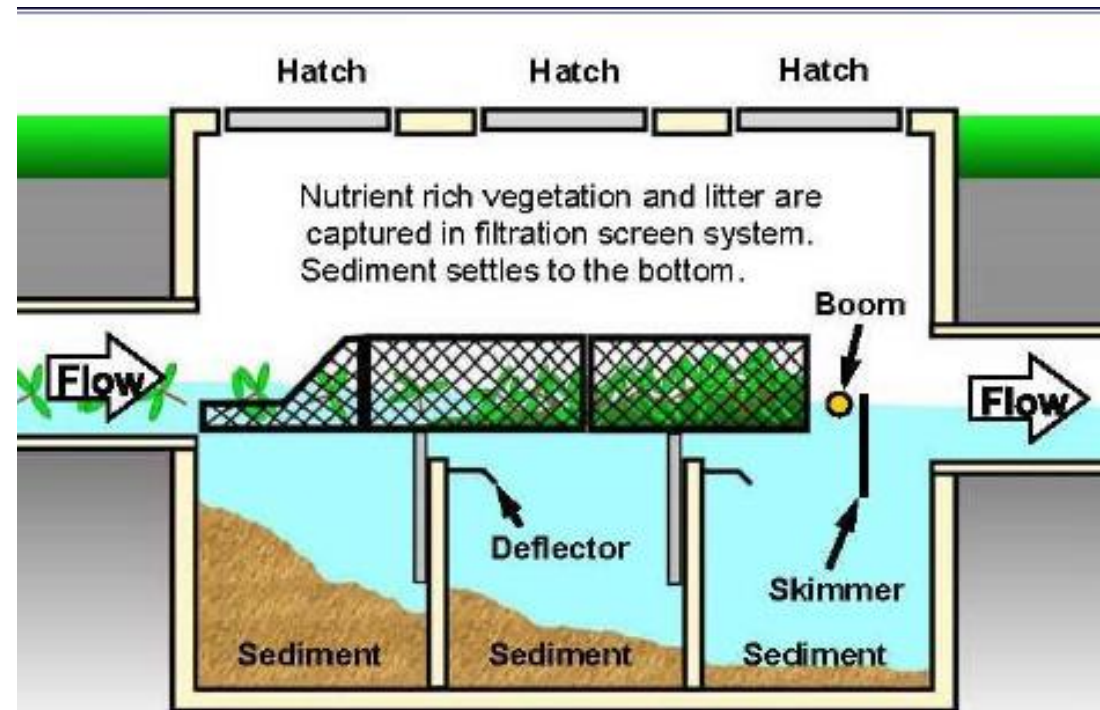




# Gross Pollutant Separators

## Gross Pollutant Separators:

- Remove litter, leaves, gravel, and coarse medium sand:
  - Provide low removal efficiency
  - Total N: 10-12%
  - Total P: 8-12%
  - TSS: 30-60%
- High Mass Removal Cost
- Best suited for locations where solids are a significant problem.
- Not intended for nutrient removal projects



Bottom of concrete structure is only 4' below the pipe.



# Technical Example of a Modern BMP

## FAA Pilot Pond Monitoring Project at Naples Municipal Airport

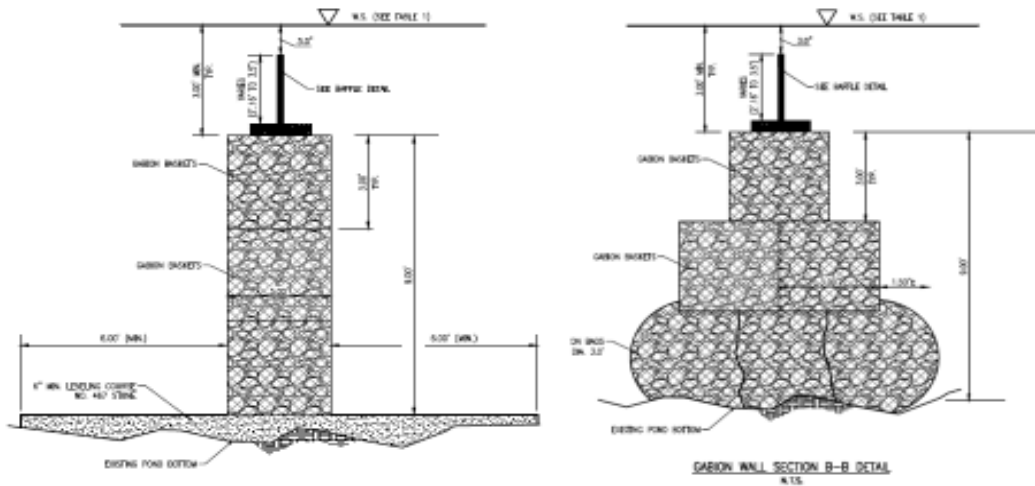




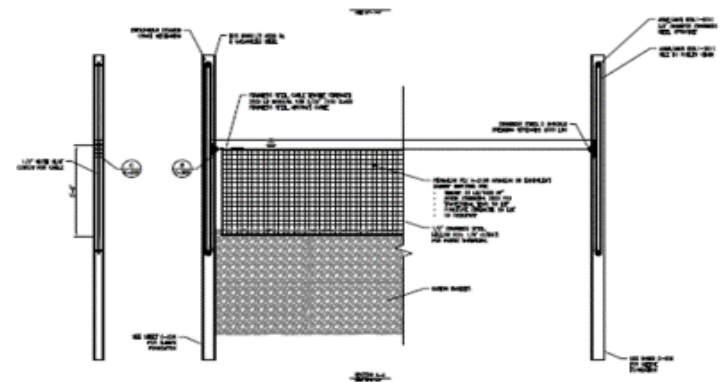


# Trickling Filters used for Stormwater Treatment

## Original Baffle Details



## Revised Baffle Design



What about using “baffle” gabion baskets with weathered concrete to build a maze of horizontal “trickling filters” for a stormwater pond?

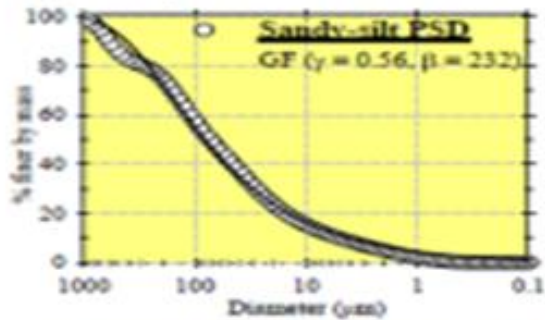




# Design modeled by UF

## Water Quality Improvements by Design

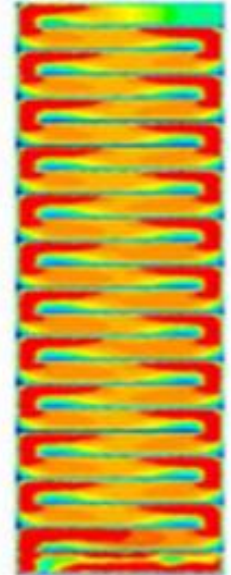
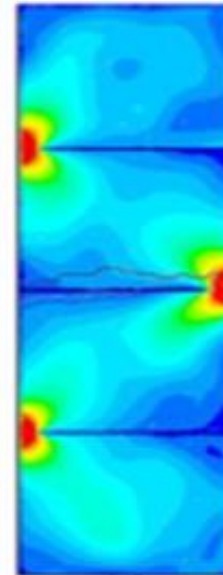
Physically-validated Model



← Increasing dead zone development



Conventional Primary Clarification



Number of Baffles	0	3	17
$\Delta PM$ (%) ( $\beta = 0.56, \gamma = 232.6$ )	45 to 60	60 to 70	> 80%
Volumetric Efficiency (%)	5 to 10	20 to 30	60 to 85





# Naples Project Area

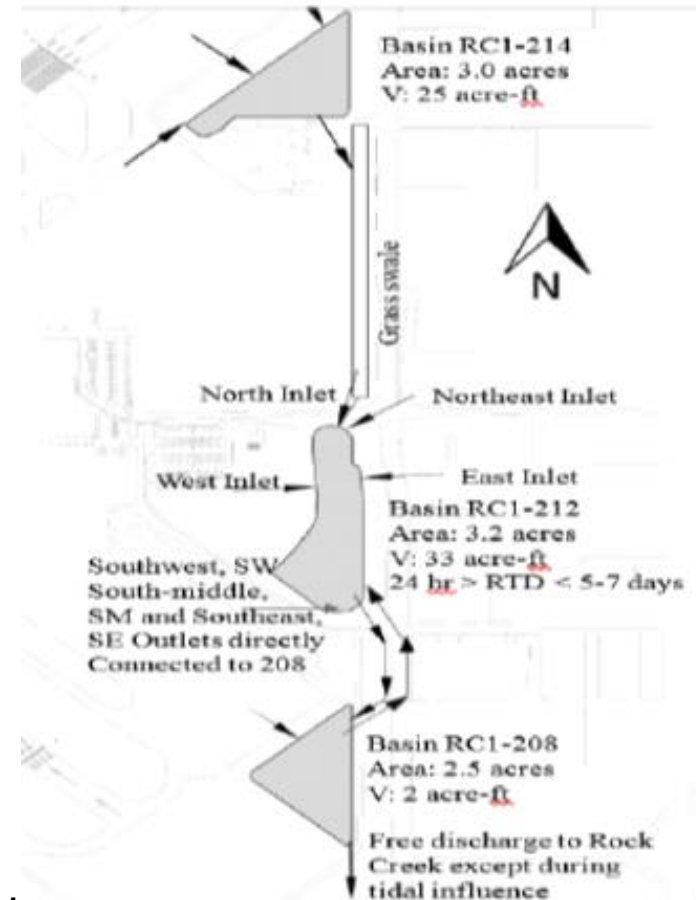




# Naples Airport Basin 212

## Process Flow Diagram for APF Eastern North to South Drainage Systems

1. UF focus of Phase III monitoring was basin 212; although 208, is hydraulically, basin 212-extended
2. Basin 212 and 208 are directly hydraulically connected; the hydraulic interactions are complex.
3. Very small hydraulic gradient between basin 212 and 208; flow direction between 208 and 212 is driven by wind, gradient and tide.
4. Basin 212 *continuously* conveys flows from the offsite commercial Northeast (NE) MS4 system.
5. Basin 212 *was and is* a small on-line conveyance basin with groundwater and NE baseflow interactions.
6. Basin 212 surface to watershed area ratio is approximately 2%, not the more typical 10



Courtesy of Dr. John Sansalone, University of Florida





# Pre-Project Site Aerial

## POND 212 BEFORE



Courtesy of Scott Brady, PE, EG Solutions, Inc.



# Post-Project Site Aerial

## POND 212 AFTER



Courtesy of Scott Brady, PE, EG Solutions, Inc.

**Baffles constructed to both maximize residence time and act as a catalyst for Periphyton growth.**





# Gabion Baffle Construction







# Storm Rainfall & Flow Monitoring

## APF Basin 212 Monitoring Campaign: 2014-2015

UF Event Storm Number	Rainfall (mm)	E (L/s)	W (L/s)	NE (L/s)	N (L/s)	Total Inflow Volume (m <sup>3</sup> )	Net Outflow Volume (m <sup>3</sup> )	Volume Detained (m <sup>3</sup> )
1	52.3	211	249	520	341	36657	5533	244
2	54.4	138	112	528	182	30459	28698	1751
3	80.8	325	344	1401	451	45507	58212	1730
4	38.4	163	335	536	199	23644	5726	2094
5	25.7	88	61	639	911	30432	7374	1575
6	24.1	204	61	639	911	39245	7918	1306
7	24.9	204	88	509	911	39445	8852	1448
8	19	187	75	751	222	24497	9290	8
9	24.4	227	84	348	128	18175	10232	426
10	67.3	464	158	1105	602	63244	70490	2703
50 <sup>th</sup>	32	204	100	587	396	33558	9071	1511
<b>Super-Storms</b>								
1-3	205.2	325	344	1401	451	128342	104699	2695
5-8	54.9	204	88	751	911	75505	17941	1531
4-9	117.6	227	335	751	911	200488	46094	2840

Courtesy of Dr. John Sansalone, University of Florida



# Nutrient Load Reduction Results

## APF Basin 212 Monitoring Campaign: 2014-2015

Mass Separation (%): Per Storm or Per "Super-Storm"							
UF Event Storm Number	SSC	TN	TP	TSS	TDN	TDP	COD <sub>i</sub>
1	83.7	43.7	70.1	89.1	52.1	90.6	74.4
2	-24.0	-53.6	29.1	-52.6	-30.0	-43.1	-18.3
3	70.1	-109.8	13.6	48.4	-78.2	18.5	-107.7
4	86.9	24.3	75.1	86.5	24.1	74.5	73.7
5	68.8	53.0	45.8	80.3	57.3	19.5	80.7
6	67.6	64.6	44.6	80.6	68.2	35.9	78.7
7	57.0	58.6	54.1	70.6	63.6	41.3	85.9
8	66.8	-25.3	76.8	76.2	-5.0	75.5	84.7
9	77.2	-10.2	49.6	82.7	-3.3	45.5	50.5
10	22.1	-139.7	44.4	23.2	-187.6	-13.1	1.9
<b>Overall*</b>	59.7	22.9	46.4	59.9	31.4	34.0	56.4
Super-Storms							
1-3	61.8	-19.4	31.0	21.8	0.8	37.9	18.5
5-8	72.4	44.4	65.6	81.8	50.5	56.4	87.9
4-9	84.6	43.8	77.7	88.0	46.3	71.0	88.0

Courtesy of Dr. John Sansalone, University of Florida



# University of Central Florida (UCF) Research

UNIVERSITY OF CENTRAL FLORIDA

Stormwater  
Management  
ACADEMY

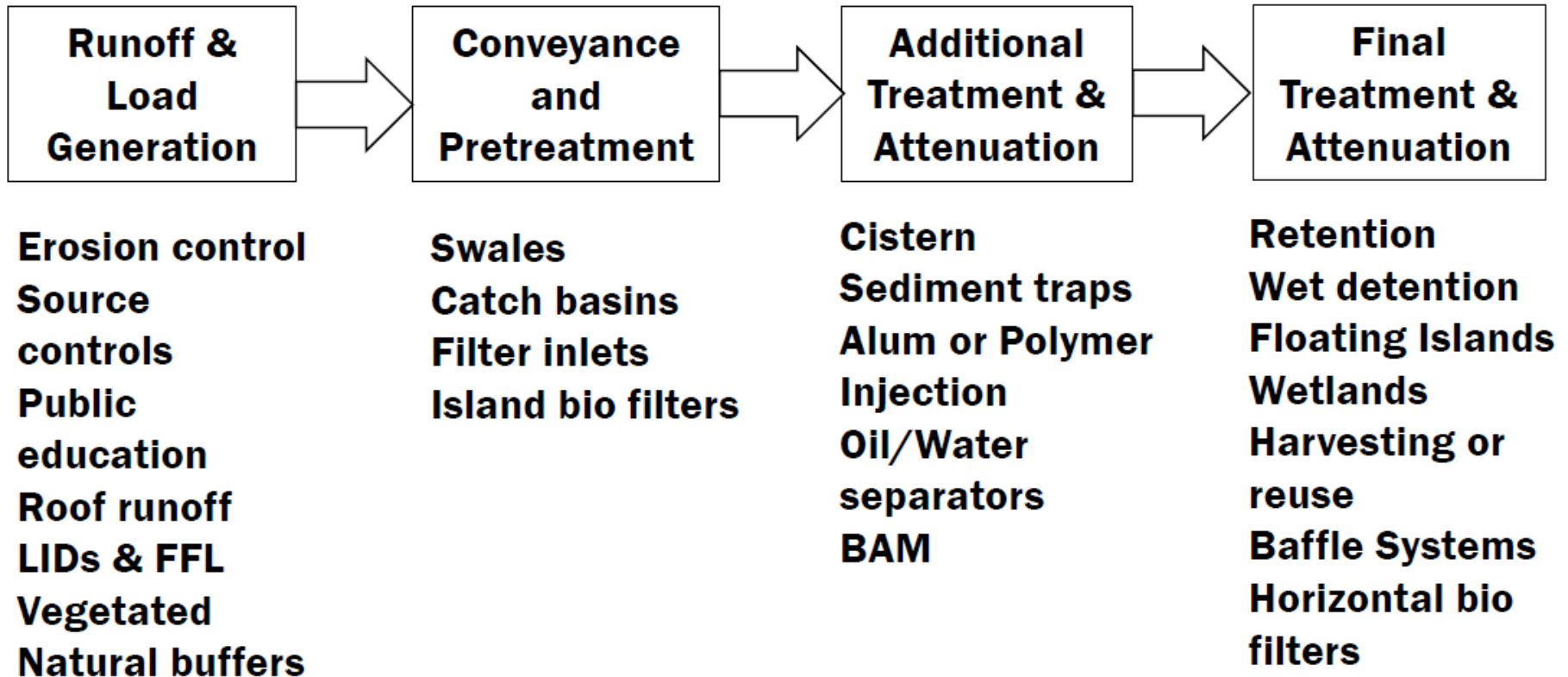
*"Managed Stormwater is Good Water"*







# BMP Treatment Trains





# University of Central Florida (UCF) Research

Enter a Name for Your Project:

Select Meteorological Zone for Project:

Enter the Mean Annual Rainfall:  inches

Specify Type of Surface Discharge Analysis:

Conduct a Groundwater Discharge Analysis:

Nitrogen Removal Efficiency (%):

Phosphorus Removal Efficiency (%):

1. Enter Catchment

2. Enter Treatment

3. Configure Catchments

4. Summary Treatment Report

5. Complete Report

6. Cost Comparisons

Open Pre BMP

Open Project

New Project

Save Project

Exit BMPTrains

BMP Trains Reports

Copy Back

### Complete Report (not including cost)

Project: Example 1  
Date: 7/8/2020 1:17:27 PM

#### Site and Catchment Information

Analysis: Specified Removal Efficiency

Catchment Name	Example Catchment
Rainfall Zone	Florida Zone 1
Annual Mean Rainfall	5.50

#### Pre-Condition Landuse Information

Landuse	Undeveloped - Ruderal/Upland Pine: TN=1.694 TP=0.162
Area (acres)	10.00
Rational Coefficient (0-1)	0.05





# Treatment Train

## DRY DETENTION



**REDUCES RUNOFF VOLUME AND REMOVES SOLIDS**

- Dry detention will remove particulates and runoff volume a minimal change in concentration
- Lack of particulates will reduce the efficiency of the wet pond



## WET DETENTION



**REMOVES SOLIDS AND DISSOLVED NUTRIENTS**

**Efficiency enhancement from loss of runoff volume**

- Total Nitrogen Efficiency = 30% exfiltration + 70% \* 0.35 (Wet Detention) = 55%
- Total Phosphorus Efficiency = 30% exfiltration + 70 \* 0.64 (Wet Detention) = 75%



# OFW Standards

## **Analysis Procedure:**

- **Demonstrate the proposed activities will not contribute to an existing water body impairment, degrade an existing OFW, and provide a “net improvement.**
- **Provide reasonable assurance based on site specific conditions that demonstrate parameter discharge will not contribute to water quality violations.**

## **Additional Source Controls, Best Management Practices, and other Protective Measures:**

- **Historically, the standard approach taken by applicants to provide such reasonable assurance for discharges to OFWs has been to provide an additional 50% water quality treatment. In light of the antidegradation requirements for OFWs and impaired waters applicants are encouraged to incorporate additional source controls, Best Management Practices (BMPs) and other protective measures in order to assist in providing reasonable assurance that the proposed activities will not contribute to an existing violation of water quality standards.**





# OFW Standards

## **Additional Source Controls, Best Management Practices, and other Protective Measures:**

- **In addition to the extra 50% treatment volume for discharges to OFWs, impaired waters, or other water bodies that do not meet water quality standards. The applicant should be encouraged to incorporate:**
  - **Stormwater Pollution Prevention Plan (SWPPP)**
  - **Post-Construction Pollution Prevention Plan**
  - **Increased average wet season hydraulic residence time of wet detention pond to a minimum of 21 days with a maximum pond depth of 12 feet.**
  - **Source Controls**
  - **Stormwater Conveyance and Pre-Treatment BMPs**



# The History of the 10-2

- **The South Florida Water Management District Rule 40E-400.315**
  - **Allowed for a No Notice General Permit to be granted for the construction or alteration of minor systems located entirely within uplands, but the system must be:**
    - **$\leq$  10 Acres Total Project Area**
    - **$\leq$  2 Acres of Impervious Area**
    - **Not Impact Wetlands**
    - **Not conducted in or over wetlands or other surface waters**
    - **Drainage facilities shall not include pipes with dia. greater than 24"**
    - **Not apart of a larger common plan for development, or sale**
- **Led to the proposal of HB503(12)**
  - **Allowed for the creation of Section 403.814(12), F.S.**





# What is s. 403.814(12), F.S.

- **A general permit granted for the construction, alteration, and maintenance of a stormwater management system serving a total project area of up to 10 ac. “when” the system is designed, operated, and maintained in accordance with the applicable rules adopted in pursuant to Part IV of Chapter 373.**
  - **There is a Rebuttable Presumption that the discharge for such a system will comply with state water quality standards. The construction of such a system may proceed without any further agency action by the department of water management district if, within 30 days after construction begins, an electronic self-certification is submitted to the department or water management district that certifies the proposed system was designed by a Florida registered professional to meet the following requirements:**



# 10-2 Requirements

- a) The total project area involves less than 10 ac. and less than 2 ac. of impervious surface;**
- b) No activities will impact wetlands or other surface waters;**
- c) No activities are conducted in, on, or over wetlands or other waters;**
- d) Drainage facilities will not include pipes having diameters greater than 24", or hydraulic equivalent, and will not use pumps in any manner;**
- e) The project is not a part of a larger common plan, development, or sale;**
- f) The Project does not:**
  - 1. Cause adverse water quantity or flooding impacts to receiving water and adjacent lands;**
  - 2. Cause adverse impacts to existing surface water storage and conveyance capabilities;**
  - 3. Cause a violation of state water quality standards; or**
  - 4. Cause an adverse impact to the maintenance of surface or ground water levels or surface water flows established pursuant to s. 373.042, F.S., or a work of the district pursuant to s. 373.086, F.S.**





# 10-2 Applications

- **Approximately 220 10-2 Self Certifications submitted each month**
- **Resulting in nearly 2640 Self Certifications submitted in 2019**
- **The rate of self certifications submitted each year has increased each year since the inception of provisions of s. 403.814(12), F.S.**

## **Department Task:**

**s. 373.4131(6)(b), F.S., now requires the Department to review and evaluate the 10-2 Self-Certifications for compliance with state water standards and to provide the Legislature with recommendations for improvements... to the Legislature by January 1, 2021.**



# Next Steps

## 1. Request Stakeholder Input

- a. General rulemaking information being maintained on website:

<https://floridadep.gov/water/water/content/water-resource-management-rules-development>

**DEP Staff are Available for Outreach Efforts**

- b. Review input to prepare rule making options

## 2. Notice of Rule Development (NORD)

- a. Following initial outreach – Formally initiate rulemaking with NORD
- b. Conduct rule Development Workshops, Receive Additional Input and Information
- c. Refine Options Throughout, and Prepare Proposed Rule Updates

## 3. Notice of Proposed Rule





# Request for Stakeholder Input

**We want to encourage input from all stakeholders:**

- **Stormwater design, relevant scientific information, and operation considerations**
- **Special considerations identified s. 373.4131(6)(a), F.S.**
- **s. 403.814(12), F.S. (10-2 General Permit) Input for Department's Review**
- **Recommendations for modifying Chapter 62-330, F.A.C., and the Applicant's Handbooks, Volumes 1 and Volumes 2**

**Please submit all initial comments, information, and/or ideas ahead of our initiating rule development to [Stormwater2020@floridadep.gov](mailto:Stormwater2020@floridadep.gov), by 10/01/2020**

**Rule Development Workshops will be held later following the initiation of Rule Development.**





**[Stormwater2020@floridadep.gov](mailto:Stormwater2020@floridadep.gov)**