DRAFT
WHITE PAPER – PROPOSED STATEWIDE STORMWATER RULE
March 3, 2008 Revision

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.

Background

The original "statewide" stormwater rule, Chapter 17-25 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 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 stormwater permitting program was delegated to each of the water management districts (excepting the NWFWMD) in the mid-1980s.

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.

Broad Objectives

The proposed statewide stormwater rule provides for the following broad objectives:

1. To update the ERP water quality treatment rules to increase the effectiveness of new stormwater treatment systems in removing nutrients and reducing nutrient loads, and in decreasing the movement of nutrients into ground waters.
2. To reduce the number of water bodies that become impaired by nutrients from future development (about 45% of Florida's current verified impaired waters are nutrient related).
3. To meet the goal of the Water Resource Implementation Rule, Chapter 62-40, F.A.C, which is to assure that post-development stormwater characteristics do not exceed pre-development stormwater characteristics (peak discharge rate, pollutant load, volume).
4. To streamline stormwater permitting and make stormwater regulatory requirements more consistent throughout the state (provide a more level playing field).

Draft Rule Concepts

The proposed performance standard for new stormwater treatment systems is for post-development nutrient loads to not exceed the pre-development nutrient loads. For the purposes of this rule, pre-development is equivalent to undeveloped and is defined as native landscape, not the current existing land use such as row crops or other "developed" condition. Also, nutrients are defined as the more limiting of total nitrogen (TN) and total phosphorus (TP). It is presumed that treating TP and TN will provide adequate treatment for other pollutants.

Under the proposed framework, each project will require a nutrient loading assessment for both the pre-development and post-development condition. This results in each project developing its own unique treatment efficiency goal. This represents a significant departure current rules in which only post-development loading is considered and reduced. Stormwater pond design volumes for retention and detention facilities are derived primarily from values calculated in the report entitled "Evaluation of Current Stormwater Design Criteria within the State of Florida" (Harper and Baker, 2007). Stormwater treatment volumes will vary around the state depending on historical rainfall records, and will also vary in the same location based on pre- and post-development site conditions and land use.

It is proposed to use the "applicant's handbook" platform for establishing BMP criteria. The recently completed Applicant's Handbook for ERP in the Northwest Florida Water Management District has been used initially as the model document.

BMP "treatment trains" may be required in many cases in order to meet the required removal efficiencies. The proposed rule provides a mechanism to calculate the treatment credit associated with successive BMPs that are used in series. Although BMP treatment trains have always been "encouraged" by the agencies, there has not been a methodology established to calculate the appropriate load reduction for such trains.

It is anticipated that reuse or recycling of stormwater may become more commonplace in order to reduce discharge of stormwater volumes and pollutant loads, especially when

using wet detention systems. Stormwater reuse may be used in combination with other "traditional" stormwater BMPs. Tables are provided that allow for calculating the amount of treatment credit to be allowed for associated water storage and irrigation rates.

In addition to stormwater reuse, a comprehensive menu of Low Impact Design (LID) concepts is under development. Credits will be established to increase the focus on nonstructural, pollution prevention BMPs as first "car" in the treatment train. These LID concepts include:

- Green roof/cistern/irrigation systems
- Pervious concrete
- Florida Friendly Landscaping/Green Industry BMP Program
- Promotion of natural vegetation on-site to reduce compaction of urban soils/loss of infiltration capacity

Lastly, a section specific to stormwater retrofitting will serve to accelerate stormwater enhancement and restoration projects for existing development.

Significant Issues to be Resolved

Staff members from DEP and the WMDs have met several times in late 2007 and early 2008 to discuss rule concepts and to compile a draft handbook. A number of significant issues have been identified that require resolution prior to moving forward with formal rulemaking. Work groups consisting of DEP and WMD staff have been assigned to each of the issue topics. These work groups will work with the members of the Technical Advisory Committee to address these and other rulemaking issues. Issue papers have been developed by the work groups and are attached.

LOW IMPACT DESIGN (LID) BMPS
ISSUE PAPER

Statewide Stormwater Treatment rule
Technical Advisory Committee
March 5, 2008

Primary Issue:

To achieve the desired levels of nutrient load reductions in urban stormwater management systems, it is recognized that greater emphasis needs to be placed on nonstructural best management practices (BMPs) that can either reduce the generation of stormwater or reduce the amount of nutrients that get into the stormwater. The concept of "Low Impact Design" is one in which site hydrology is an integrating framework that using nonstructural source controls to minimize changes in hydrology and pollutant loading after development. Implementing LID BMPs presents many challenges related to quantifying the pollutant load reduction benefits of such BMPs, consistent design and construction of these BMPs, and assuring their long term operation and maintenance.

Questions:

1. How can we quantify the pollutant load reduction benefits of LID BMPs such as green roof/cistern systems, pervious pavements, disconnecting directly connected impervious areas, and developments with landscaping based on the Florida Friendly Landscaping program?

2. Can we quantify the pollutant load elimination or reduction benefits of Natural Area Conservation to promote the preservation or restoration of native forests landscapes?

3. How can we assure consistent quality design and construction of LID BMPs?

4. How can we assure the long term longevity through appropriate operation and maintenance of LID BMPs, especially for disconnecting directly connected impervious areas or Florida Friendly Landscapes?