



POSITION PAPER 2021 STATEWIDE STORMWATER RULEMAKING

Excess nutrients are the leading cause of impairment in our surface water bodies and are a growing concern in groundwater and springs. It is critically important that stormwater treatment standards are enhanced to meet the intent of the original and current statewide stormwater rule and provide for increased levels of nutrient removal, better protection of groundwater, incorporation of green infrastructure, and more consistent and comprehensive best management practice (BMP) design criteria throughout the state.

Section 5 of Senate Bill 712 (Chapter 2020-150, Laws of Florida) directs the Department of Environmental Protection (Department) together with the state's five Water Management Districts to *"initiate rulemaking to update the stormwater design and operation regulations . . . using the most recent scientific information available "* and requires consideration of low-impact BMPs that *"increase the removal of nutrients"* and *"measures for consistent application of the net improvement performance standard."*

Background

The original "statewide" stormwater rule, Chapter 17-25, FAC, 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 that were established in Rule 17-4.248, FAC, as an interim regulation.

BMP design criteria were originally established based on limited Florida-specific field data. When adopted in 1982, the performance standard for stormwater treatment was set to 80% average annual load reduction of Total Suspended Solids (TSS). The state of stormwater science at the time suggested that there was a significant correlation between TSS and other pollutants, and that 80% removal of TSS would bring about a similar removal in other pollutants; however, subsequent decades of research have proven that assumption to often not be valid for nutrients.

Although based on limited data, the original BMP design criteria, by rule, 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, FAC, stormwater permitting program was delegated to each of the water management districts in the mid-1980s, except for the Northwest Florida WMD.

In the mid-1990s, the Environmental Reorganization Act provided the water management districts independent authority under Chapter 373, FS, to regulate stormwater quality under the Environmental Resource Permit program. Accordingly, each of the WMDs promulgated its 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, FAC) to criteria that provided both higher and lesser degrees of treatment.

Additionally, in 1990 the State Water Implementation Rule (Chapter 62-40) was developed and adopted in response to stormwater legislation passed in 1989. The stormwater program's institutional foundation, goals, and performance standards were outlined in the 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 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 clear that increased removal of nutrients from stormwater is critical to protecting Florida's surface and groundwater. Further, research has indicated that current design and performance criteria do not properly address nutrient loadings resulting from typical stormwater runoff conditions.

Another important development over the past 10 to 15 years has been the emergence of new BMP technologies. Wet detention and dry retention systems accounted for nearly every BMP implemented in Florida 25 years ago. Wet detention has been commonly used due to its suitability in areas of high groundwater table, and dry retention has been commonly used in areas of lower groundwater tables. Dry detention was also used as an early BMP but was largely abandoned once extensive monitoring showed its relative ineffectiveness in comparison to the other systems.

Many Low Impact Design (LID) techniques using Green Infrastructure (GI) BMPs that are specifically designed for the Florida environment have been permitted and constructed as standalone BMPs or part of a BMP treatment train system. Other technologies, such as the use of biosorption activated media (BAM), have evolved from the confines of university research to broader implementation in permitted stormwater management systems. It is important to recognize new technologies in stormwater permitting once they have been scientifically proven to be effective, reliable, and maintainable.

The "Evaluation of Current Stormwater Design Criteria within the State of Florida" (Harper and Baker, June 2007) was an excellent compilation of the state of science for stormwater pollution and BMPs at the time it was published. It demonstrated the potential

deficiencies of then-current stormwater design criteria with respect to nutrient removal and recommended revised criteria for solving those deficiencies.

The Harper and Baker report combined with work by the Technical Advisory Committee associated with what became known as the 2010 Statewide Stormwater Rule culminated in the draft “Environmental Resource Permit Stormwater Applicant’s Handbook” (March 2010). The Rule was never promulgated, so the draft design criteria was never finalized. However, it was informally adopted by some of the Water Management Districts and serves as a good starting point for implementing the stormwater rule revisions mandated by SB 712.

Section 5 of the 2020 Environmental Resource Management Act (Chapter 2020-150, Laws of Florida) added a new subsection (6) to Section 373.4131, FS, directing the Department and Water Management Districts to initiate rulemaking to update and improve stormwater design and operation regulations, and directs the Department to review and evaluate permits issued under the “10/2” general permit (Section 403.814(12), FS) for compliance with water quality standards by January 1, 2021:

373.4131 Statewide environmental resource permitting rules. -

(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.

(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.

It is important to note that Florida now has de facto standards for computing BMP efficiencies. Those are reflected in the draft “Statewide Best Management Practice (BMP) Efficiencies for Nonpoint Source Management of Surface Waters” (DEP, July 2018), which relies heavily on the 2007 Harper and Baker report, and the University of Central Florida’s BMPTRAINS model. The latter covers a growing number of LID/GI and new BMP technology practices.

Broad Objectives

The proposed statewide stormwater rule should provide for the following policy objectives:

1. To update the ERP water quality treatment design criteria to increase the effectiveness requirements of new stormwater treatment systems in removing nutrients and reducing nutrient loads in keeping with the intent of the original and current statewide stormwater rules, and in decreasing the movement of nutrients into groundwater.
2. To eliminate the number of waterbodies that become impaired by stormwater nutrients from future development (about 45% of Florida’s waters currently verified as being impaired are nutrient-related impairments).

3. To meet the goal of the Water Resource Implementation Rule, Chapter 62-40, FAC, which is to assure that post-development stormwater characteristics do not exceed pre-development stormwater characteristics (peak discharge rate, pollutant load, and volume) for all new development.
4. To establish criteria for “net improvement” for re-development projects that will result in proportionate improvement in the receiving waterbodies.
5. To streamline stormwater permitting and make stormwater regulatory requirements more consistent throughout the state.
6. To recognize the effects of climate change, sea-level rise, and changes in rainfall patterns on stormwater treatment systems, and the design and maintenance thereof.

Initial Recommendations

Much like the initiative undertaken in 2010, the rule should be easy to interpret and would be paired with revisions to the Applicant’s Handbook that would describe the process of how the rule can be met. The Applicant’s Handbook should cover as many BMPs as there is science to support and specify how BMP treatment train calculations should be performed. There should be language in the rule that allows for additions of and updates to new BMPs and efficiencies as they become available. Use of BMPTRAINS and “Statewide Best Management Practice (BMP) Efficiencies for Nonpoint Source Management of Surface Waters” should be suggested for use. Net improvement should be the minimal standard in all waters of the state.

Several issues should be defined or clarified in the rule:

1. The design criteria for stormwater systems should minimize the impacts of pollutant loadings to the greatest extent possible, helping to ensure that the future burden of water quality restoration and protection efforts due to new construction or redevelopment is shifted away from local taxpayers.
2. Net Improvement – “Net Improvement” should be defined with a standard meaning that the post-development pollutant load is less than the pre-development pollutant load.

Net improvement should be the minimal standard of improvement for discharges in all waters of the state. State policy and implementing design criteria should require no net increase in pollutant loadings to a receiving waterbody, even if the waterbody is not yet specifically identified as being impaired pursuant to FDEP rules.

3. Redevelopment - For projects that redevelop existing construction that discharges to jurisdictional waters or to MS4s to a jurisdictional water, the criteria should require significant reductions in pollutant loadings as compared to that which was occurring from the site prior to redevelopment, up to and including meeting the criteria for new development when redevelopment projects remove existing structures down to bare earth.
4. Sea Level Rise - The rule should consider the effect of sea level rise on stormwater BMPs and permitting practices in coastal areas. Sea level rise should be considered when designing and maintaining stormwater structures recognized in state rules.
5. Hydrology - The rule should consider the changing nature of hydrologic conditions (e.g. new rainfall patterns) during the useful life of stormwater BMPs throughout the state. Changing rainfall patterns should be considered when designing and maintaining stormwater structures recognized in state rules.

6. Surface Water/Groundwater Nexus – Consider the potential for infiltration or percolation of pollutants from a stormwater management retention BMP into groundwater that later reaches a jurisdictional surface water.

[Florida Stormwater Association](#)

December 11, 2020