



BOARD OF COUNTY COMMISSIONERS

Natural Resources Management Department

2725 Judge Fran Jamieson Way
Building A, Room 219
Viera, Florida 32940

Stormwater Program Memorandum

October 1, 2020

To: Florida Department of Environmental Protection

From: Brevard County Natural Resources Mgmt. Dept. – Stormwater Program

Re: Statewide Stormwater System Design Criteria
Implementation of Section 5, Chapter 2020-150, Laws of Florida

Purpose:

The intent of this memorandum is to provide the Florida Department of Environmental Protection (Department) with comments concerning the implementation of section 5 of Chapter 2020-150, Laws of Florida.

Water Quality Degradation:

Water Quality in the State of Florida has been declining for years due to point discharges introduced by industrial waste and raw sewage from waste water treatment plants and non-point discharges contributed by agriculture, rapid growth and development, and atmospheric deposition from industries. Since 1995, the Department and the Water Management Districts (Districts) have been engaged in an on-going struggle to regulate water quality in our state; however, from the beginning, it has been little gains and great losses in nutrient reduction. The latest studies indicate the presumptive rule for nutrient reduction is not being met in the traditional stormwater management systems used as the industry standards in stormwater engineering design to attempt to mitigate the impacts of new development for the past 25 years. We know from science, monitoring, and observation that the intent of Chapter 62-40.431 (2)(a) is not being met:

62-40.431 Stormwater Management Program.

- (1) Effective stormwater management is essential to reduce existing nonpoint source pollution problems and to protect surface water resources from stormwater pollution from existing and new land uses.
- (2) The following goals are established to provide guidance for Department, District and local government stormwater management programs:
 - (a) The primary goals of the state's stormwater management program are to maintain, to the

maximum extent practical, during and after construction and development, the pre-development stormwater characteristics of a site; to reduce stream channel erosion, pollution, siltation, sedimentation and flooding; to reduce stormwater pollutant loadings discharged to waters to preserve or restore designated uses; to reduce the loss of fresh water resources by encouraging the recycling of stormwater; to enhance ground water recharge by promoting infiltration of stormwater in areas with appropriate soils and geology; to maintain the appropriate salinity regimes in estuaries needed to support the natural flora and fauna; and to address stormwater management on a watershed basis to provide cost effective water quality and water quantity solutions to specific watershed problems.

Methodology:

Determine how best to prevent further water quality decline to the 45% water bodies listed as impaired in Florida as well as our groundwater - proven to be a major source of nutrients to the Indian River Lagoon as documented in studies conducted during the Indian River Lagoon TMDL Refinement Process - and determine how to restore Florida's already impaired, or nearly impaired, natural lakes, streams, springs, rivers, and wetlands. Additionally, prevent further impairment to the remaining 55% water bodies by implementing more stringent water quality enhancement criteria. At the moment, the Department and the Districts require that new development discharging to non-impaired water bodies to provide X-inches of rainfall over a drainage area or impervious area while new development discharging to listed impaired water bodies are restricted to pre-development nutrient loading estimations based upon land use, soils, hydrological characteristics, daily and seasonal rainfall, runoff coefficients, and event mean concentrations. In most cases, the former methodology does not satisfy the intent of Chapter 62-40.431, F.A.C., to maintain the pre-development characteristics of the site for all new development.

Intent and Goals:

Let's get back to the basics: the intent of Chapter 60-40.431, F.A.C. Apply practical nutrient loading estimations for pre- and post-development site conditions for new development where pre-existing conditions are defined as the natural land where no anthropogenic activities have occurred. Apply this policy consistently to all surface waters, whether listed as impaired or not, to prevent further deterioration of water quality within our surface waters and groundwater. Incentivize and provide credit for the treatment of groundwater and motivate re-development projects through the application of low impact development.

Then and Now:

We currently have at least 25 years of permitted ponds constructed throughout the State that are not providing the fully intended water quality enhancement benefits needed for State's surface waters and groundwater. Investigate and research existing

technical papers conducted in Florida to evaluate and determine why the presumptive rule is not being met within the existing, permitted stormwater management systems. Review current Environmental Resource Permitting review policies. Does some of the poor performance seen in many older permitted stormwater management systems stem from lack of long-term maintenance and follow through inspections by the Department and Districts? Are the as-built inspections performed by the Department and State adequate? Could compliance enforcement – and litigation follow through - be improved? How detrimental is the years of sediment that lies at the bottom of many older permitted wet detention ponds? Does the sediment in an older pond flush out of the system into receiving water during intense or frequent rain events especially those ponds that have, more than likely, never been dredged and restored to their design water quality treatment design specifications?

Revamp, Enhance, and Restore:

The State has tasked the Department with reviewing and updating the *Environmental Resource Applicant's Handbook: Volume II*. Much of the groundwork has been laid out in the 2010 *Draft Environmental Resource Permit Stormwater Quality Applicant's Handbook* as it considers practical nutrient loading estimations for pre- and post-development site conditions. Pre-development conditions should be considered as the natural state of the land prior to anthropogenic activities and alterations, and pre- vs. post- nutrient loading attenuation should be applied consistently to all surface water bodies, regardless of it being listed as impaired or not, to prevent further deterioration of water quality within our State's surface waters and groundwater. When applying this methodology, distance from a water body, depth of a receiving manmade water body, or mixing or settling time in a man-made water body should not be considered as "water quality enhancement" since most nutrients believed to be "settled out" are eventually flushed downstream from intense and/or frequent rain events.

The referenced draft handbook also denotes the importance of proper maintenance of permitted stormwater management systems and mentions the submittal of the bi-annual inspection forms to the District for review and inspection confirmation. Dredging existing permitted stormwater ponds should be considered part of the maintenance with necessary frequency as determined by the Department. Consider restoring the bi-annual inspection report submittals to include staff reviews and inspections for the Environmental Resource Permit conditions, and provide more detailed guidance for maintaining the stormwater management systems especially pertaining to the removal of sediment and/or muck within older ponds to restore the intended and permitted permanent pool design.

The updated ERP Stormwater Handbook should encourage, incentivize, and accept low impact development and proven innovative technologies (i.e. Biosorption Activated Media) demonstrating consistent nutrient reductions in stormwater runoff from new and retrofit development, and offer different forms of Basin Management Action Plan credits for the abundant BMP Treatment Trains.

Re-evaluate the 10-2 rule. Cumulative water quality impacts are occurring from all these “smaller” projects.

Revisit the enforcement of irrigation use for residential, commercial, and sports facilities (i.e. golf courses).

Consequentially, more attention needs to be directed to the hundreds of newly defunct Homeowner Associations every year resulting in the Districts’ limited abilities to enforce compliance for poorly maintained, permitted stormwater management systems.

Please feel free to contact Robbyn Spratt at (321) 350-8397 if you have any follow-up questions or require any assistance with this monumental task.