



Protecting Southwest Florida's unique natural environment and quality of life ... now and forever.

October 1, 2020

Florida Department of Environmental Protection
3900 Commonwealth Blvd.
Tallahassee, FL 32399

Submitted via email to Stormwater2020@floridadep.gov

RE: Conservancy of Southwest Florida's Preliminary Comments on the Environmental
Resource Permitting Rules for Stormwater Design and Operation Regulations

To Whom It May Concern:

The Conservancy of Southwest Florida submits the following preliminary comments on the Environmental Resource Permitting (ERP) Rules for Stormwater Design and Operation Regulations on behalf of our 7,000 supporting families. Updating the statewide stormwater standards for development and redevelopment has been a priority for the Conservancy of Southwest Florida for over a decade. The organization was closely involved in the 2007-2010 stormwater rule development that ultimately was not finalized and Conservancy staff served on the Florida Department of Environmental Protection's (FDEP) appointed stormwater Technical Advisory Committee (TAC) established in 2008. There were multiple noteworthy reasons for initiating the 2010 stormwater rulemaking. However, two of the most critical were as follows:

The increasing number of waters identified as impaired for nutrient pollution throughout the state of Florida; and the 2007 Report titled "Evaluation of Current Stormwater Design Criteria within the State of Florida", which concluded that the stormwater design criteria utilized by the Water Management Districts (WMD) and FDEP fail to consistently meet the statutorily required 80% reduction in either Total Nitrogen (TN) or Total Phosphorus (TP), or the 95% required reduction for discharges to Outstanding Florida Waters (OFWs). For example, one of the most relied-upon stormwater management BMPs, wet detention ponds, "can be expected to provide a net removal of approximately 20-40% for total nitrogen; 60-70% for total Phosphorus".¹

¹ Harper, H.H. and Baker, D.M. Evaluation of Current Stormwater Design Criteria within the State of Florida. 2007.



Conservancy of Southwest Florida has been awarded Charity Navigator's prestigious 3-Star top rating for good governance, sound fiscal management and commitment to accountability and transparency. Charity Navigator is America's largest and most respected independent evaluator of charities.

A decade later, some improvements have been implemented in stormwater management, but the underlying reasons that prompted the 2010 stormwater rule remain relevant in 2020. Section 5 of Chapter 2020-150 (SB 712) directing FDEP to initiate the ERP stormwater rulemaking is a significant first step, considering the continued development that has occurred in the intervening years constructed with outdated and inadequate standards and the prevalence of nutrient pollution and harmful algae blooms (HABs). As FDEP moves forward with rulemaking, the following are issues that must be explored and addressed by the new statewide stormwater rule. In some cases, reference is made to the 2010 draft rule or applicants handbook (AH), where applicable.

Avoid Pre-emption of Local or Regional Stormwater Standards

The Conservancy supports the establishment of a minimum consistent baseline for stormwater standards statewide. However, the ability of WMD's and/or local governments' ability to enact stricter standards than the statewide baseline must be preserved. WMD's and/or local governments may tailor regionally-specific standards based upon the communities served, land use changes, and environmentally-sensitive areas. The Conservancy recommends that FDEP clearly define during rulemaking initiation that the stormwater rule's objective is to provide a consistent baseline, which may be modified by WMD's or local governments to be more protective.

Pre-Development Conditions Definition

The calculation of the pre-development conditions and pollutant loading rates is the foundation for designing a stormwater system that meets all applicable requirements and protects water quality. The correct baseline must be known before calculating the required reductions and designing a suite of stormwater BMPs that will meet the reduction goal.

Pre-development does not necessarily mean "existing conditions", but rather, pre-development is the natural, undisturbed land-use and vegetative characteristics of the site absent anthropogenic impacts. Simply using existing conditions would in certain cases result in locking in current, human-caused pollutant loading into the stormwater system design. Thus, how "pre-development" is defined will ultimately influence whether the updated stormwater regulations are effective at achieving the relevant performance standards.

The March 2010 Draft of the Environmental Resource Permit Stormwater Quality Applicants Handbook appropriately defined both "pre-development" and "natural vegetative community type", as follows (emphasis added)²:

"Pre-development" means the natural vegetative community type of the project area.

"Natural vegetative community type" means the landscape that *currently exists* or is *likely to have existed prior to disturbance* based on the vegetation community associated with the natural soil type of the project area, using information such as soil surveys, aerial photographs, and the

² FDEP and Water Management Districts. March 2010 Draft Environmental Resource Permit Stormwater Applicant's Handbook. 2010.

vegetation communities that can reasonably be expected to have existed on the site before disturbance.

BMP Trains Model Tool

As part of the analysis required for determining pre- and post-development loading and designing stormwater management systems, the Conservancy recommends evaluating the BMP Trains model for use statewide in WMD applicant handbooks. The BMP Trains model is a treatment train approach published by the University of Central Florida Stormwater Management Academy that utilizes multiple structural and non-structural Best Management Practices (BMPs), including Low Impact Development (LID) BMPs to reach the desired level of pollutant removal. The current BMP Trains model is based on the regulatory framework in place at this time, and would need to be revised to incorporate the updates from this rulemaking. However, the use of the BMP Trains tool has the potential to increase the transparency, consistency, and review of proposed stormwater systems.

Net Improvement Definition

Section 5 of Chapter 2020-15 directs DEP to consider and address “...measures for consistent application of the net improvement performance standard to ensure significant reductions of any pollutant loadings to a waterbody.”

“Net Improvement” is typically defined as ensuring the stormwater pollutant loading from the developed site is less than the current loading from the site; this is required for any projects that discharge to waterbodies that do not meet applicable state water quality standards, i.e., the waterbody is impaired. However, not only is net improvement interpreted differently across the state’s five Water Management District’s, the Environmental Resource Permitting (ERP) rules lack specific, quantifiable requirements to measure net improvement. Due to the lack of a quantifiable target, a one pound reduction in nutrient loading could theoretically be interpreted as “net improvement”. The increasing number of waterbodies impaired for nitrogen and phosphorus throughout the state of Florida underlines the critical need to develop a protective and effective definition for net improvement, given the continued rapid rate of development and population growth, estimated at approximately 900 new residents per day.³

The Conservancy recommends that the stormwater rulemaking address the net improvement definition through a two-step process:

First, for those waterbodies listed on the state’s Verified List of Impaired Waters, net improvement should be defined as a specific percent *better than* pre-development conditions, similar to Alachua County’s stormwater manual that identifies at least 10%.⁴ The rulemaking should consider whether a greater than 10% net improvement standard is necessary, given that the majority of adopted TMDLs require significantly more than a 10% pollutant loading reduction. FDEP should evaluate a percent reduction net improvement standard based on the average TN and TP load reduction requirements for TMDLs throughout the state of Florida.

³ Demographic Estimating Conference. Executive Summary. 2020.

<http://edr.state.fl.us/Content/conferences/population/demographicsummary.pdf>

⁴ Alachua County Stormwater Treatment Manual. Alachua County, Florida. October 2018.

Secondly, once a TMDL is adopted with waterbody specific required load reductions, then net improvement requirements should equal the percent reduction identified in the applicable TMDL, in order to protect water resources.

10/2 General Permits Self Certification

Section 5 of Chapter 2020-15 also directs DEP to review and evaluate permits issued pursuant to F.S. 403.814(12), commonly referred to as 10/2 General Permits or 10/2 Self Certification Permits. Projects with 10 acres or less of upland impacts and 2 acres or less of impervious surface are eligible to “self-certify” under 10/2 that a development meets the applicable requirements, including providing net improvement if located within an impaired watershed. 10/2 General Permits bypass the higher level of scrutiny and review required by the agencies for Individual Permits. An analysis by Eric Livingston in 2014 indicated that “less than one percent of the 10/2 Self Certifications for projects within impaired watersheds met the “Net Improvement” standard of having the post-development pollutant load less than the pre-development pollutant load.”⁵

Despite the size restrictions on these types of permits, the cumulative impact of hundreds of 10/2 permits being approved within impaired watersheds and failing to meet net improvement must be addressed in the rulemaking process. Moreover, due to the site-specific nature of net improvement, the undersigned recommend that the 10/2 provisions in F.S. 403.814(12) be revised to prohibit issuance when a proposed project is located within a watershed listed as impaired, or has an adopted TMDL.

Sea Level Rise and Climate Change Impacts on Stormwater Systems

Due to climate change and increasing sea level, the ability of our stormwater system to handle additional water is at risk. Florida is expected to see, on average, about 0.76 m sea level rise by 2060, and 1.95m by 2100.⁶ This, coupled with low elevations and a high-water table, puts Florida’s stormwater systems in jeopardy.

A 2020 research study near Tampa Bay investigated and attempted to quantify the reliability and performance of a retention pond evaluated under sea level rise conditions.⁷ An integrated model that uses both surface water and groundwater data – both projected for future sea level rise – was utilized to determine whether or not the retention pond would fail given the additional water. The results of the study showed that sea level rise could cause an increase of the seasonal high-water elevation of the pond, thereby lowering the systems reliability by about 45%. The amount of pollutants discharged by the system increased due to the ponds failure to recover within the required 72 hours.

The results of this study highlight the need to update stormwater system standards to reflect possible changes in groundwater elevations, peak flows, and the ability for soils to store water. Updated sea level

⁵ Summary of the Impacts of the “10/2 Self Certification” General Permit. Eric Livingston, Watershed Management Services, LLC, Crawfordville, FL. Updated November 2014.

⁶ Melillo, J.M.; Richmond, T.T.C.; Yohe, G.W. (Eds.) Climate change impacts in the United States. In The Third National Climate Assessment; U.S. Global Change Research Program: Washington, DC, USA, 2014; 841p.

⁷ Davtallab, R., Mirchi, A., Harris, R.J., Troilo, M.X., Madani, K. Sea Level Rise Effect on Groundwater Rise and Stormwater Retention Pond Reliability. Water [Internet]. 2020 April [cited 2020 July 28]; 12, 1129; doi:10.3390/w12041129

rise projections and increases of both surface water and groundwater must be included in stormwater system designs in order to avoid pond failure and possible release of untreated stormwater.

Stormwater systems are designed using an estimate of rainfall depth-area-duration in order to achieve a certain level of performance.⁸ Rainfall estimates are created by using historical rainfall record statistics; this method unfortunately does not take into consideration future climate conditions. The changing climate is likely to increase rainfall amounts and durations, therefore, current stormwater systems may not be able to handle these increased volumes, thus causing flooding and other unanticipated issues. The updated rule must address the dynamic nature of projected average rainfall frequency and volume used as the basis for the design of stormwater systems.

Redevelopment/ Retrofitting Standards

Due to the projected population growth within the state of Florida, retrofit and redevelopment projects will become increasingly prevalent. However, with redevelopment come challenges associated with ensuring outdated stormwater management systems are updated to modern standards. FDEP can begin addressing these challenges by defining redevelopment within the Applicants Handbook and ensuring that the stormwater rule update appropriately incorporates protective redevelopment and retrofitting performance standards.

Additionally, updated stormwater regulations should consider incentives for redevelopment, while simultaneously requiring the same regulatory standards for redevelopment as new development. Recognizing that redevelopment projects are sometimes land-limited, we suggest that the same performance standard apply to these projects as new development, with the flexibility of using off-site mitigation within the same watershed as necessary to meet requirements. Adopting similarly stringent standards with off-site mitigation options would ensure stormwater improvements would be made on-site as the first preference, protect water quality, and provide flexibility based on site conditions.

Ongoing Inspection and Recertification in Conjunction with Post-Construction Monitoring

In Part I, Section 1.5 of the March 2010 draft applicants handbook, the AH proposed a system of ongoing inspection and recertification of stormwater treatment systems. A similar set of guidelines for stormwater maintenance, monitoring, and compliance should be developed as part of this rulemaking effort that outlines specific schedules for inspection and recertification and identifies the agencies role in oversight and compliance.

In addition to both inspection and recertification, periodic monitoring of effluent water quality is needed to determine whether the systems are achieving the required treatment performance standards – whether 80%, 95%, or net improvement. Given future uncertainties related to sea level rise, water table levels, and climate change impacts, periodic monitoring will help pinpoint stormwater system designs or

⁸ Southeast Florida Regional Climate Change Compact. Regional Impacts of Climate Change and Issues for Stormwater Management. [Internet]. 2015 [cited 2020 September 23]; <https://southeastfloridaclimatecompact.org/wp-content/uploads/2015/11/Stormwater-Guide.pdf>

individual BMPs that may not perform according to expectations and will also provide data that can be used to fine-tune the research and calculations contained in models like BMP Trains.

Florida's stormwater treatment rules are technology-based rules that are predicated on a performance standard and the associated presumption that if the stormwater system is built to the design criteria specifications, then it is in compliance. There are decades of data that demonstrate the presumption of compliance for non-point sources of pollution has been significantly contributing to the degradation of Florida's water quality. Therefore, integrating appropriate monitoring into the updated stormwater rules will create baseline data and the ability to craft a stormwater rule that can be built on and adapted by science-based monitoring and research.

Conclusion

Finally, should FDEP convene a TAC for the stormwater rule development, the Conservancy supports a similar level of diverse representation, including representatives of the conservation community, as was embodied on the prior stormwater TAC.

The Conservancy of Southwest Florida greatly appreciates the opportunity to provide preliminary comments on the Environmental Resource Permitting Rules for Stormwater Design and Operation Regulations. The Conservancy looks forward to participating in future rule development workshops and working with FDEP, the WMD's, and other agencies and stakeholders to create a statewide stormwater rule that is science-based and protects the essential water resources that underpin Florida's environment, economy, and quality of life. Please do not hesitate to contact us should you have any questions or wish to discuss our comments.

Sincerely,



Marisa Carrozzo
Everglades & Water Policy Manager
marisac@conservancy.org



Kelly McNab
Environmental Planning Specialist
kellym@conservancy.org