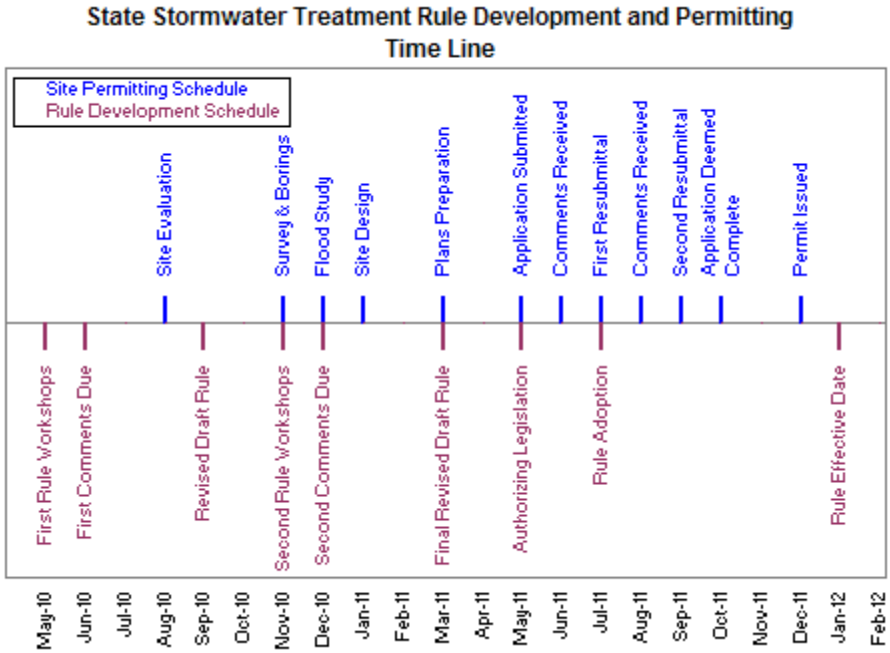
DEVELOPERS BEWARE: STORMWATER RULE CHANGES ARE COMING

By David J. Buyens, PE and Mark T. Livesay, EI

The new Statewide Stormwater Treatment Rule enacted by the Florida Department of Environmental Protection (FDEP) may begin to have a catastrophic effect on landowners and development as early as January 2012. As an example of the potential impacts, over 80% of the sites in Lakeland engineered by Chastain-Skillman, Inc. rely on wet detention or dry retention with underdrain/sidedrain to attain attenuation and water quality treatment goals. These options will no longer be solely adequate for all sites being developed. The new rule relies mostly on dry retention, which is not feasible on these sites. Simply stated, such sites may become uneconomical to develop. Therefore, owners and developers would benefit from immediately evaluating their sites to determine whether they should be designed and permitted before this new rule takes effect.

The FDEP presented the rulemaking schedule shown in the lower half of the graphic below. For planning purposes, the tasks to attain a permit are shown on the top half, working backwards from permit issuance prior to rule effect. This demonstrates that site candidates for grandfathering should be evaluated within the next couple of months.



The FDEP is currently seeking input to the new rule regarding performance standards, loading methodology, interim Best Management Practices (BMPs), verified BMPs, underdrain removal efficiencies, site data requirements, inspection and recertification criteria and frequency, and many additional items. In particular, additional data that clarifies some of the rule provisions was requested at the recent rulemaking workshop series held in May 2010. No input as to whether the rule should move forward was solicited because the FDEP is legally bound to implement some rule by laws passed ten years ago.

Background

In 1982, Florida was the first state in the country to adopt a rule requiring the treatment of stormwater to a specified level of pollutant load reduction. In 1990, the FDEP followed up with the State Water Implementation Rule, which requires "80% average annual load reduction of pollutants that cause or contribute to violations of water quality standards." Finally, in 1999, the Florida Watershed Restoration Act was enacted, leading to the implementation of Florida's water body restoration program and the establishment of Total Maximum Daily Load limitations (i.e., the

maximum amount of a specific pollutant that can be discharged to a water body while maintaining water quality standards). These statutes contain new performance standards that were never implemented by regulatory agencies. Research has shown that current design and performance criteria do not adequately address nutrient loadings; therefore, there is a need to implement a statewide stormwater treatment rule.

Rule Provisions

For many years, developers and their engineers have designed stormwater treatment ponds to both attenuate and provide treatment of stormwater runoff. Natural percolation ponds, filtration systems and wet detention systems utilize both physical and biological processes to improve the suspended solids concentrations from discharged water. Additionally, surface baffles remove greases, oils, and other floatable materials from the stormwater prior to discharge. Nonetheless, the stormwater management facilities developed and constructed under the current rule do not achieve the pollutant removal standards specified in the current statutes. The cumulative effect has been that development has contributed to the degradation of many Florida waters by the addition of dissolved nutrients such as nitrogen and phosphorus. Therefore, the new statewide treatment rule is being put in place to remove these nutrients. Specifically, the objectives of the rulemaking are as follows:

- increase removal of nutrients so that the post-development nutrient load will not exceed the nutrient load characteristic of the natural, undeveloped (native) condition;
- reinforce requirements for discharges to impaired waters;
- institute only one comprehensive rule for the FDEP and all five Water Management Districts (WMDs);
- update BMP design criteria;
- provide BMP Treatment Train credits where, in a manner similar to the use of wetland mitigation credits, owners of sites where it is difficult to meet the standards can instead purchase offsetting credits; and
- promote low impact design and retrofitting.

The new stormwater rule does not replace the current rules, but merely augments them to improve the quality of water discharged. Together the rules will:

- change the treatment and design criteria associated with obtaining an Environmental Resource Permit;
- incorporate by reference the Stormwater Quality Applicant's Handbook;
- identify the rules of WMDs that are superseded (although each WMD will make the rules their own and be responsible for administering them);
- not affect agriculture or silviculture;
- not affect the current water quantity requirements.

Rule Impacts

Dry Sites

A dry site is one that has soils that percolate water quickly and easily. As with the current stormwater rule, the new rule allows most sites containing well drained soils and a low water table to utilize a dry retention stormwater treatment system, with percolation to groundwater as the disposal method. The treatment processes within a dry retention pond offers the greatest removal of nitrogen and phosphorus. The new rule also encourages the use of other water quality treatment components (a treatment train) including green roofs, pervious pavement, and bio-swales functioning as pre-treatment before the runoff enters the dry retention pond.

For these sites, the difference between pond designs under the current rule and the new rule varies with the site hydrology. Because the new rule essentially enhances the old rules, most dry sites will be engineered with either the same pond size or require a slight increase in pond size and the on-site stormwater conveyance system. The economic impact will be noticeable, yet likely viewed as manageable.

Wet Sites

The majority of sites in Florida contain either poor draining soils or a high groundwater table. Under the current rule, these sites are designed with a wet detention system or a dry retention system with underdrains or sidedrains to store and treat runoff. However, wet detention ponds fail to treat the stormwater runoff to the levels specified in the new rule, and underdrains and sidedrains are no longer allowed because their effect on nitrogen and phosphorus reduction is unknown. To achieve the required nutrient removal, stormwater management systems must under the new rule include a treatment train consisting of at least a dry retention pretreatment pond and a wet detention pond. Other BMPs such as green roofs, managed aquatic plant systems, bio-swales, and rainwater harvesting (stormwater

reuse ponds) can also be included, yet they are sometimes costly and provide little reduction in nutrient loads. Other options for reducing the nutrient loads currently include source reduction via decreasing the impervious area proposed, using pervious pavement systems, implementing chemical treatment, prohibiting the use of onsite sanitary systems, limiting fertilizer use, and providing vegetated natural buffers (less land to develop), and Florida-friendly landscaping.

Therefore, the solutions available for these wetter sites are limited and will likely be significantly more expensive, to the extent that cost could prohibit economical development. For example, the modifications required to change a wet site in such a manner as to enable a dry retention pretreatment pond to function and provide the required treatment level, the poor draining soil must be replaced or filled by substantial amounts of well-draining material. Since balancing cut and fill is key to the economical development of most sites compliance with the new rule may render many sites undevelopable from the perspective of economic feasibility.

Recommendation

Owners and developers would be wise to evaluate their existing or potential land holdings to assess the impact of the statewide stormwater treatment rule. If the rule's requirements have the potential to adversely impact the economics of developing a site, then it may be beneficial for the owner to obtain the Environmental Resource Permit prior to the effective date of the rule (currently projected to be January 1, 2012) so that the site is grandfathered for the duration of permit, usually five years, and then additionally extended for as long as possible past that time.

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