North Carolina
Coastal Federation
Working Together for a Healthy Coast

March 26, 2016

Annette Lucas, Stormwater Permitting
1612 Mail Service Center
Raleigh, N.C. 27699-1612.

Dear Annette,

Please accept these written comments on the proposed stormwater rules on behalf of the North Carolina Coastal Federation.

Proposed Rules Inadequate to Comply With the State's "Antidegradation Policy."

In order for these proposed rules to be consistent with the Federal Clean Water Act as well as state laws and regulations enacted pursuant to that federal statute, Section 15A NCAC 02H .1001(6) requires that whenever these proposed rules aren't sufficient to protect "existing uses," that additional measures be taken to ensure that a narrative water quality standard entitled an "Antidegradation Policy" is enforced. The rule states that: "In accordance with the "Antidegradation Policy" set forth in 15A NCAC 2B.0201, additional stormwater control measures may be required on a case-by-case basis to maintain and protect existing and anticipated uses of surface waters."

This "Antidegradation Policy" is one of the most fundamental and basic requirements of both the state's water quality standards and the Federal Clean Water Act. Enforcement of the "Antidegradation Policy" is not a discretionary decision by the State. Thus, the proposed rule language is misleading, and inadequate, and should be amended to read: "...shall be required when necessary..." rather than "...may be required on a case-by-case basis...." The proposed wording wrongly implies that enforcement is discretionary by the Department of Environmental Quality if it concludes additional safeguards are necessary to protect "existing uses" of surface waters.

Under federal law, the Department and applicants for stormwater system permits are obligated to assure that any stormwater system authorized is capable of protecting "existing uses" of classified surface waters. Along the coast, two valuable "existing uses" that must be protected are swimming and shellfish harvest. There are many other protected "existing uses," such as fish nurseries, that are vulnerable to polluted stormwater runoff and must be protected by these rules as well.

While the proposed rules must clarify that enforcement of the "Antidegradation Policy" is mandatory, even more critical is to embed a consistent and enforceable decision-making process into these proposed rules that assures that all stormwater systems authorized are adequate to protect "existing uses." The best way to assure this

happens is to have a set of design standards that are adequate to protect each "existing use." Comments provided throughout this letter suggest enhancements to proposed design standards to help make sure that "existing uses" of coastal waters are protected.

Section 15A NCAC 02H .1001(6) is necessary to include in the proposed rules because the generic design standards that are proposed will frequently not be sufficient to maintain "existing uses" that these stormwater systems are required to protect. This provision gives the illusion that there is a review process conducted by the Department that evaluates each proposed stormwater system for its adequacy to protect "existing uses," and that additional safeguards will be required when necessary. This rule language, also contained in the current standards, has not worked because there is no such case-by-case review that occurs to ensure that each permitted stormwater system protects "existing uses." As a result, every year additional "existing uses" are lost in our coastal waters. The Department has no process to conduct these case-by-case evaluations to protect an "existing use" and consistently issues permits based on the "minimum design criteria" contained in its rules.

To conduct a meaningful case-by-case analysis to ensure that "existing uses" are protected is a very challenging and complicated undertaking. Either the designer or regulator would need to fully understand the legal requirements of the Federal Clean Water Act, identify the "existing uses" that must be protected, and most importantly, be able to determine the fate and impact of any pollutants in stormwater that will be discharged taking into account various weather conditions and prolonged rainfall events. Evaluating the impact of stormwater discharges requires an understanding of water quality conditions of receiving waters. In addition, the actual dates that "existing uses" may have been lost in the past must be determined. There is also the need to understand what "anticipated" uses of surface waters could be, the current condition and vulnerability of "existing uses," whether or not a Total Daily Maximum Load allocation has been assigned to downstream receiving waters. If downstream surface waters have been assigned pollution load reduction targets for fecal coliform and *enterococcus*, then expertise to determine the fate of these specific bacteria both within the stormwater systems and once discharged, is required.

Past versions of stormwater rules tried to address the protection of "existing uses" by imposing "non-discharge" requirements. Previous rules also provided for an agency review of pending permit applications so that agency expertise in how to protect "existing uses" at least in concept could occur. The proposed rules significantly weaken these safeguards by allowing more discharging stormwater systems, reducing design storms for SA waters, and relying much more heavily on a cookbook of standardized "minimum design criteria" that aren't correlated to specific "existing uses."

A major flaw in the construction of these proposed rule is that the Department has no legal process or mechanism to enforce Section 15A NCAC 02H .1001(6) if an engineer selects the fast-track permitting option. This self-permitting process makes the option of a case-by-case analysis to protect "existing uses" impossible before a stormwater system is built and operating, and potentially contributing to the loss of an "existing use." Given that enforcement of the "Antidegradation Policy" is delegated by U.S. EPA to the Department, this flaw is inconsistent with federal requirements that the Department protect "existing uses," and enforce water quality classifications and standards. It is also inconsistent with the state's rule that requires "that any source of water pollution which precludes shellfishing "...on either a short-term or a long-term basis shall be considered to be violating a water quality standard."[1]

In coastal locations where protection of "existing uses" is the primary legal reason to have stormwater rules in the first place, the rules need to be strengthened to ensure that no new or expanded volumes of polluted runoff are discharged into SA or SB waters. In addition, the fast-tract permit option should not be allowed for SA or SB waters. If the fast tract-permit process is allowed for SA and SB classified waters, the certification form should be amended to include the following statement:

> "I hereby certify that the stormwater system that I have designed and certify is constructed according to my design will not result in discharges of stormwater that violate downstream water quality classifications or standards, or which will not contribute to the loss of an "existing use" that is protected by the "Antidegradation Policy." I further certify that I have the professional expertise to make these conclusions."

Retain SA Non-Discharge Requirements to Avoid Violations of the Clean Water Act and state water quality standards.

The existing coastal stormwater rules prohibit discharges of stormwater to SA surface waters.[2] This rule has a long history that dates back to 1985 when the

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[1] 15A NCAC 02B .0221 TIDAL SALT WATER QUALITY STANDARDS FOR CLASS SA WATERS. Any source of water pollution which precludes any of these uses, including their functioning as PNAs, on either a short term or a long term basis shall be considered to be violating a water quality standard.

[2] (C) Stormwater Discharges Prohibited. All development activities, including both low and high density projects, shall prohibit new points of stormwater discharge to Class SA waters or an increase in the volume of stormwater flow through conveyances or increase in capacity of conveyances of existing stormwater conveyance systems that drain to Class SA waters. Any modification or redesign of a stormwater conveyance system within the contributing drainage basin must not increase the net amount or rate of stormwater discharge through existing outfalls to Class SA waters. The following shall not be considered a direct point of stormwater discharge: (i) Infiltration of the stormwater runoff from the design storm as described in Subparagraph (1)(B)(iii).

Department first determined that discharges of "treated" stormwater into shellfish waters would violate the SA fecal coliform standard[3], and could not be allowed. The fecal coliform water quality standard for SA waters is designed to protect public health since shellfish can be harvested (and then eaten raw) in immediate proximity to stormwater outlets. The standard requires virtually pristine water quality, allows for no mixing zones and therefore the discharge must comply with water quality standards at the point of discharge even during rainfall.

The coastal stormwater rules were originally part of the state's regulations for "non-discharge" wastewater treatment systems. This meant that the rules provided design storm requirements for "non-discharging" treatment systems that did not discharge waste. When the coastal stormwater program was later incorporated into the National Pollution Discharge Elimination System (NPDES) program rules, it was determined that it would still be illegal to allow new or expanded discharges of stormwater into SA waters. That's because federal and state NPDES rules prohibit "permitted" stormwater discharges that violate water quality standards of receiving surface waters. It remains well document in state and federal scientific runoff studies that practical stormwater treatment technology is incapable of reliably and consistently removing enough bacteria to protect the SA fecal coliform water quality standard. Ironically, in many cases, conventional stormwater treatment systems (swales and wet

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(ii) Diffuse flow of stormwater at a non-erosive velocity to a vegetated buffer or other natural area, that is capable of providing effective infiltration of the runoff from the design storm as described in Subparagraph (1)(B)(iii). Notwithstanding the other requirements of this Rule, the infiltration mandated in this Subparagraph (1)(C)(ii) does not require a minimum separation from the seasonal high-water table.
(iii) The discharge from a wet detention pond that is treated by a secondary stormwater best management practice, provided that both the wet detention pond and the secondary stormwater best management practice meet the requirements of Subparagraph (1)(C).

[3] 15A NCAC 02B .0221 TIDAL SALT WATER QUALITY STANDARDS FOR CLASS SA WATERS
The following water quality standards apply to surface waters that are used for shellfishing for market purposes and are classified SA. Water quality standards applicable to Class SC waters as described in Rule .0220 of this Section also apply to Class SA waters.
(1) Best Usage of Waters. Shellfishing for market purposes and any other usage specified by the "SB" or "SC" classification;
(2) Conditions Related to Best Usage. Waters shall meet the current sanitary and bacteriological standards as adopted by the Commission for Health Services and shall be suitable for shellfish culture; any source of water pollution which precludes any of these uses, including their functioning as PNAs, on either a short-term or a long-term basis shall be considered to be violating a water quality standard;
(3) Quality Standards applicable to Class SA Waters:
(a) Floating solids; settleable solids; sludge deposits: none attributable to sewage, industrial wastes or other wastes;
(b) Sewage: none;
(c) Industrial wastes, or other wastes: none which are not effectively treated to the satisfaction of the Commission in accordance with the requirements of the Division of Health Services;
(d) Organisms of coliform group: fecal coliform group not to exceed a median MF of 14/100 ml and not more than 10 percent of the samples shall exceed an MF count of 43/100 ml in those areas most probably exposed to fecal contamination during the most unfavorable hydrographic and pollution conditions.

ponds) become a source of fecal coliform bacteria rather than a sink, and these treatment systems actually degrade rather than protect water quality.

The proposed rules eliminate this long-standing and necessary prohibition on discharges of stormwater by allowing the option of treating runoff and discharging it.[4] This new regulatory option in the proposed rules that authorizes "discharging SCMs" is fundamentally and legally inconsistent with the objective of these rules to protect the fecal coliform water quality standard for SA waters. This discharging option must be eliminated from this proposed rule for SA waters if it is to be consistent with the Federal Clean Water Act and state water quality classification and standards. The Department does not have the statutory authority to issue permits for treated wastewater discharges that violate water quality classifications and standards, and its "Antidegradation Policy."

Include Prohibitions on Discharges of Treated Stormwater to SB Classified Waters that are Used for Swimming and Human Contact.

The current stormwater rules for SB waters were developed back in 1988 based upon the fecal coliform standard[5] that is part of the state's water quality standards. To protect public health, this water quality standard has been supplemented by updated requirements by the U.S. Environmental Protection Agency (EPA) to enhance safeguards for humans that swim, wade, surf, and otherwise come into contact with our coastal waters. As a result, starting in 1997 the N.C. Recreational Water Quality Program began

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[4] (7) SCMS FOR SA HIGH DENSITY PROJECTS REQUIREMENTS. High density projects subject to SA waters requirements shall use one of the following approaches for treating and discharging stormwater:
(c) RUNOFF TREATMENT WITH DISCHARGING SCMs. SCM(s) shall treat the stormwater from the entire project during the 95th percentile storm event as set forth in Rule .1003 (3)(a)(i) of this Section and meet the following requirements:
(i) a licensed professional shall provide documentation that it is not feasible to meet the MDC for infiltrations systems as set forth in Rule .1051 of this Section; outlets to convey stormwater to grassed swales or vegetated areas. Requirements for these curb outlet systems are as follows:
(i) The curb outlets shall be designed such that the swale or vegetated area can carry the 12 peak flow from the 10-year storm at a non-erosive velocity;
(ii) The longitudinal slope of the swale or vegetated area shall not exceed five percent, where practicable. Where not practical due to physical constraints, devices to slow the rate of runoff and encourage infiltration to reduce pollutant delivery shall be provided;
(iii) The swale's cross-section shall be trapezoidal with a minimum bottom width of two feet;
(iv) The side slopes of the swale or vegetated area shall be no steeper than 3:1 (horizontal to vertical);
(v) The minimum length of the swale or vegetated area shall be 100 feet; and
(vi) Low density projects may use treatment swales designed pursuant to Rule .1061 of this Section in lieu of the requirements specified in Part (i) through (v).

[5] 15A NCAC 02B .0222 TIDAL SALT WATER QUALITY STANDARDS FOR CLASS SB WATERS
(c) Organisms of coliform group: fecal coliforms not to exceed a geometric mean of 200/100 ml (MF count) based on at least five consecutive samples examined during any 30 day period and not to exceed 400/100 ml in more than 20 percent of the samples examined during such period.

testing coastal waters to make sure they are safe for bodily contact. The coastal waters monitored include the ocean beaches, sounds, bays and estuarine rivers.

The Recreational Water Quality Program currently tests for *enterococcus* bacteria, an indicator organism found in the intestines of warm-blooded animals.[6] The program tests 240 swimming sites, most of them on a weekly basis during the swimming season, which runs from April 1 to Oct. 31. All ocean beaches and high-use sound-side beaches are tested weekly from April though September; lower-use beaches are tested twice a month. All sites are tested twice a month in October and monthly from November through March. When unacceptable water quality sampling results occur, swimming advisories are issued.

The *enterococcus* standard now used is incorporated into state water quality standards. It is much stricter than the SB fecal coliform water quality standard on which these proposed stormwater rules are based. Unlike the fecal coliform standard, this EPA standard for *enterococcus* applies during and immediately after rainfall, and one unacceptable sample mandates the issuance of swimming advisories. Sampling data consistently shows results from single samples that trigger swimming advisories. Many of these samples with high levels of bacteria are located near pipes that discharge stormwater runoff after rainfall (http://portal.ncdenr.org/web/mf/rwq-sampling-data). Research indicates that conventional discharging stormwater treatment systems that these proposed rules authorize are not adequate to protect swimming waters from being contaminated, and in fact, can be a source of this bacteria in many cases.[7]

Swimming advisories issued for waters used for swimming and human contact (SB but also including SA waters) constitute an illegal loss of an "existing use" of coastal waters. Under the Federal Clean Water Act and state water quality classifications and standards, any "existing use" that has occurred since November 28, 1975 in our coastal

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[6] 15A NCAC 18A .3402 BACTERIOLOGICAL LIMITS FOR SWIMMING AREAS
(a) The enterococcus level in a Tier I swimming area shall not exceed either:
(1) A geometric mean of 35 enterococci per 100 milliliter of water, that includes a minimum of at least five samples collected within 30 days; or
(2) A single sample of 104 enterococci per 100 milliliter of water.
(b) The enterococcus level in a Tier II swimming area shall not exceed a single sample of 276 enterococci per 100 milliliter of water.
(c) The enterococcus level in a Tier III swimming area shall not exceed two consecutive samples of 500 enterococci per 100 milliliter of water.

[7] J.M. Hathway and W.F. Hunt, 2011. Indicator Bacteria Performance of Storm Water Control Measures in Wilmington, North Carolina. http://ascelibrary.org/doi/10.1061/%28ASCE%29IR.1943-4774.0000378

waters must be protected or restored, and stormwater management standards are required by law to be designed to protect these uses.

To provide stormwater management that is sufficient to protect existing and potential swimming and other body contact activities in coastal waters, the coastal stormwater rules that apply to both SB and SA classified waters must: (1) prohibit discharges of new or expanded volumes of stormwater; and (2) result in infiltration and other stormwater management systems that are sized large enough to handle any storm event that could trigger a swimming advisory. The proposed rules will result in frequent and predictable stormwater discharges from treatment systems. These discharges will contain levels of *enterococcus* bacteria that result in the issuance of swimming advisories. Such advisories are inconsistent with the federal and state "Antidegradation Policy," a narrative water quality standard. For this reason, these proposed standards are not consistent with federal and state water quality classifications and standards.

Design Storm Changes Requires Verification To Ensure Compliance with Water Quality Standards and Classifications.

The proposed rules alter the design storm for stormwater management systems installed to protect existing and designated uses of coastal waters. The current rules require that systems installed within one-half mile of SA waters be designed to handle the 1-year, 24-hour storm, or approximately 3.7 inches of rainfall. For systems install further inland, the requirement is to handle 1.5 inches of rainfall. These design standards were last reviewed in 2008 when it was found by the Department that the rules in effect at that time were failing to adequately protect coastal water quality.

The proposed rules significantly reduce the design storm for systems installed within one-half mile of SA waters to the 95-percentile storm, or approximately 2.8 inches (or less) amounts of rainfall. The rules slightly increase the size of systems installed inland to the 90-percentile storm, or about 1.8 inches of rainfall. The rules also provide a new option to discharge "treated" wastewater from stormwater systems to SA waters.

The state's water quality standards require that any source of water pollution that precludes shellfishing "...on either a short-term or a long-term basis shall be considered to be violating a water quality standard." In addition, the fecal coliform water quality standard for SA waters must be protected "...in those areas most probably exposed to fecal coliform contamination **during the most unfavorable hydrographic and pollution conditions**." Likewise, swimming advisories that violate the federally required "Antidegration Policy" are now issued based upon unacceptable data obtained

from just one water quality sample that can be collected during or immediately after rainfall events. Back-to-back rain events occur frequently, over taxing the design capacity of stormwater systems that are still saturated by the last rainfall.

The design storm requirements for coastal stormwater systems should be established to fully protect surface water quality classifications, standards and ensure compliance with the federally required "Antidegradation Policy." While there has been analysis of how frequently the 95- and 90-percentile rain events take place, this analysis has not been paired with hydrologic and the fate-of-bacteria modeling to demonstrate that the proposed changes in the design storms will assure compliance with coastal water quality standards and protection of "existing uses." In fact, the reduced design storm for systems near SA waters will result in more frequent discharges of stormwater polluted with bacteria. The design storm revision for systems built more than one-half mile from SA waters will slightly increase the amount of capacity in stormwater systems (assuming they are maintained and operated properly), but that revised standard has not been evaluated to ensure that it is adequate to comply with water quality standards as required by the Federal Clean Water Act as well as state water quality rules. Given the U.S. EPA requirements for monitoring swimming waters and posting swimming advisories, discharging stormwater systems allowed under the proposed rules are most assuredly inadequate to protect "existing uses" of coastal waters.

In order to fulfill its legal responsibility to protect "existing uses," the Department needs to not only model and predict the frequency, volume and rate of discharges from stormwater systems designed using these new rainfall amounts, but also the fate of bacteria in those discharges on coastal water quality given the hydrologic characteristics of coastal watersheds. This analysis is necessary to determine if the specific water quality standards for bacteria for SA and SB classified waters (that must be protected even during "worst hydrologic conditions") will be violated by these new rules. The SA and SB standards must be modeled based upon "worst hydrologic conditions," and the model should predict if stormwater systems based upon the proposed design storms are sufficient to prevent even a single unacceptable sample of *enterococcus* in swimming waters (this will cause a swimming advisory to be issued).

Models of the fate-of-bacteria discharged from stormwater systems installed in coastal watersheds can rely on many of the same procedures that were used to develop Total Maximum Daily Loads (TMDL) for fecal coliform for several dozen small coastal watersheds. These models allocate allowable pollutant loads to known sources so that actions may be taken to restore the water to its intended uses. To determine the appropriate design storm to protect swimming and shellfish harvest, the model should:

(1) Target bacteria and compliance with water quality standards as the requirement;
(2) Recognize that in coastal watersheds most sources of bacteria are natural, and are abundant all over the coastal landscape;
(3) Consider that a natural coastal watershed has very little surface runoff, and most natural bacteria therefore stays on the coastal landscape and is not washed into surface waters;
(4) Assume that any discharge of stormwater caused by land uses as well as permitted stormwater systems will contain bacteria levels that are well above standards for swimming and shellfish harvest;
(5) Recognize that stormwater treatment technologies are not capable of removing enough bacteria to meet coastal water quality standards, and some traditional treatment methods are a source of bacteria and counterproductive to be used in the coastal landscape;
(6) Assume that the assimilative capacity of the coastal watershed to prevent bacteria from reaching surface waters is directly related to volume of runoff. The more volume of runoff the lower the assimilative capacity since surface runoff that flows over the coastal landscape will quickly become even more contaminated with bacteria;
(7) Characterize the level of pollution that is acceptable based upon the existing conditions of the water body, highlighting how current conditions deviate from the target end-point;
(8) Build in a margin of safety. The margin of safety addresses uncertainties associated with pollutant loads, modeling techniques, data collection and the fact that most stormwater systems are poorly maintained and operated; and
(9) Consider seasonal variation in bacteria loads. Variability can arise due to stream flows, temperatures, and exceptional events (e.g., droughts, hurricanes).

Lacking the findings of this analysis, the Department cannot assure that it is protecting swimming and shellfish harvest on our coast as it is mandated by the U.S. Congress and the N.C. General Assembly to do.

Tighter Control on Stormwater Conveyances in Low Density Projects Necessary.

There are numerous examples of subdivisions built in recent years under the "low-density" threshold that designed their paved streets to convey large quantities of stormwater into coastal waters. The concept of "low-density" is that these projects do not contain enough "connected impervious cover" to produce polluted runoff that will violate coastal water quality standards. If such projects are in-fact creating polluted

runoff, then they should be regulated as "high-density" development to ensure adequate stormwater management to prevent stormwater discharges.

The practice of installing streets with "ribbon curbs" that allow roadways to collect runoff from driveways, houses, and yards is common. These subdivisions use streets to collect and convey stormwater. In some neighborhoods, water is conveyed for thousands of feet to distant locations where it is discharged directly into storm drains, streams, ditches and swales. Concentrated flows of polluted stormwater are being discharged into coastal waters at rapid rates and large volumes. Even when vegetated swales are used to receive this concentrated runoff from streets, they flood and discharge large volumes of stormwater since they are too small and typically wet to infiltrate the water. These designs do not maximize "diffuse flow" through vegetated areas and "minimize channelization of flow" as the rules require. For homeowners in these neighborhoods, these drainage designs cause floods and erosion that damage their investments, and costly maintenance nightmares.

The proposed rule should be clarified to prohibit the use of subdivision streets as stormwater conveyances for neighborhoods. To accomplish this clarity, the following changes to the proposed rule are recommended (15A NCAC 02H.1003(2)(d)):

CURB OUTLET SWALES. Low-density projects may use curb and gutter if ~~with~~ outlets to convey all stormwater to non-discharging grassed swales or vegetated areas ~~that~~ are installed. Requirements for these curb outlet systems are as follows:

(i) ~~The~~ Multiple curb outlets shall be designed such that the swale or vegetated areas ~~can~~ are sized to infiltrate all conveyed stormwater without discharging it to surface waters and carry the peak flow from the 10-year storm at a non-erosive velocity;

(ii) ~~The longitudinal slope of the swale or vegetated area shall not exceed five percent, where practicable. Where not practical due to physical constraints, devices to slow the rate of runoff and encourage infiltration to reduce pollutant delivery shall be provided~~;

(iii) The swale's cross-section shall be trapezoidal with a minimum bottom width of two feet which is located above the seasonal high water table;

(iv) The side slopes of the swale or vegetated area shall be no steeper than 3:1 (horizontal to vertical); and

(v) The ~~minimum~~ length of the swale or vegetated area shall be ~~100 feet~~ sized so that it can infiltrate the design storm~~; and~~.

~~(vi) Low-density projects may use treatment swales designed pursuant to Rule .1061 of this Section in lieu of the requirements specified in Part (i) through (v).~~

The rule should also be amended to encourage the use of streets that have grassed shoulders and swales rather than those constructed with curb and gutters.

As-Built Certification Requirements Need to Be Consolidated, and the Required Form Referenced in the Proposed Rules Should Be Made Available on the Department's Website for High Density Projects.

For the standard permitting process, the proposed rules require that the applicant submit "a completed and signed Designer's Certification Form" that states that the project was built as approved.[8] For the fast-track permitting, the proposed rules require that the applicant submit an "as-built certification form signed and sealed by a professional engineer of record and signed by the applicant." The fast-tract rule includes a specific reference to an "as-built" certification form on the Departments website.[9].

Certification requirements and information needs should be equal for both the standard and fast-tract permit processes. The "as-built" information required under both permit processes is equally as important to determining if projects are constructed as designed and permitted. It is imperative that the designer of record certify that projects are constructed as designed and permitted, and that they oversee construction to put their professional seals on "as-built" documents. "As-built" requirements should be consolidated and made the same for both the standard and fast-tract permit processes.

In addition, the "as-built" certification form for high-density projects does not seem to exist on the Departments website (if it does exist, we could not find it on the website). The only certification form that is listed under the forms section of the website is for low-density projects.[10] Since providing this certification form is an existing requirement for both low- and high-density projects, the required form should be made easily available and include all necessary "as-built" documentation requirements.

Treatment Swale Design Criteria Inadequate for SA and SB Waters.

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[8] 15A NCAC 02H .1042 (4)(a)
[9] 15A NCAC 02H .1044
[10] https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Surface%20Water%20Protection/SPU/SPU%20-%20State%20Stormwater%20Permit%20Forms%20and%20Documents/SSW-SWG06-AsBuiltCert-20120604-DWQ-SPU.pdf

The proposed minimum design criteria for treatment swales (15A NCAC 02H .1061) will result in constant discharges of stormwater polluted with bacteria that will violate SA and SB water quality standards. It is know that swales are a source of bacteria rather than a way to remove it from stormwater. The amount of bacteria contained in runoff flowing out of a swale remains high during entire storm events since there is no "first-flush" effect when it comes to rain and bacteria. This daunting challenge in treating bacteria has been repeatedly recognized as part of the public record of previous rule-making proceedings that developed past coastal stormwater rules.

The concept of a "treatment swale" to be used to protect SA or SB waters is flawed. Such discharging systems should not be allowed in watersheds with SA or SB waters. These types of swales will contribute to widespread bacteria pollution of coastal waters, and are a counter-productive stormwater management measure for coastal watersheds. Only swales that are designed not to discharge can be allowed in these watersheds.

Use of "Miniumum Design Criteria" in SA and SB Watersheds for Treatment Measures that Discharge Should be Prohibited.

These criteria are generic, and not correlated with the specific water quality standards for sensitive waters such as waters classified as SA or SB. Many of these criteria allow for treated stormwater to be discharged during design storms. As stated throughout this letter, the concept of discharging treated stormwater to swimming and shellfish waters is flawed when it comes to bacteria, and inconsistent with the federal Clean Water Act and state mandated water quality standards. The use of any minimum design criteria that allows for a discharging treatment system to SA or SB waters should be prohibited in the proposed rules.

Please do not hesitate to contact me if you have any questions or need further clarification on any of these comments.

With best regards,

Todd Miller
Executive Director