

MEMORANDUM

TO: Environmental Resource Regulation Permit Review Staff

FROM: Bob Brown, Director, Environmental Resource Regulation Dept.

DATE: November 12, 2009

SUBJECT: Environmental Resource Permit Water Quality Evaluations for Discharges to Water Bodies that Do Not Meet State Water Quality Standards

This memo is an update to a previous memo dated June 11, 2004 regarding application of existing District rules in the evaluation of permit applications for projects which ultimately discharge to water bodies that do not meet state water quality standards. Such waters include, but are not limited to, "impaired waters" identified on the state's "Verified List" of impaired waters or has a state adopted Total Maximum Daily Load (TMDL). There may also be other water bodies that do not meet state water quality standards, but which have not yet gone through the formal state assessment process.

What is an "impaired water"?

An impaired water is a water body for which a water body assessment has been done using the methodology established by the Department of Environmental Protection (DEP) in 62-303, F.A.C. or other state adopted TMDL, and a determination has been made that the water body does not meet water quality standards and is impaired.

In accordance with the rule, DEP is continually evaluating water quality data for water bodies around the state (on a watershed planning group basis) to "verify" those water bodies that are impaired due to discharges of pollutants. Water bodies that have been assessed and determined to be impaired due to pollutant discharges are included on the "Verified List" adopted by DEP Secretarial Order. Water bodies on the "Verified List" can be determined from DEP's web site. The next step in restoration of these listed waters is the development of "Total Maximum Daily Loads" (TMDLs) by DEP and, ultimately, a Basin Management Action Plan (BMAP) to specify the activities, schedule and funding sources that point and non-point source discharges will undertake to restore the water body.

Relationship between "impaired waters" and District water quality rules

The DEP's impaired waters rule does not limit the applicability of existing rules and criteria under other provisions of Florida law. Consequently, the District must continue to implement its existing rules to ensure non-degradation of Outstanding Florida Waters (OFWs) and prevent further degradation of impaired waters, or other water bodies that do not meet state water quality standards, as a result of new stormwater discharges.

This memorandum highlights the requirements in the existing District Environmental Resource Permit (ERP) rules to meet water quality criteria. While the existing rules require an applicant to provide reasonable assurance to demonstrate that a proposed project will not degrade an OFW and will not contribute causative pollutants to an impaired water body, they do not provide design or operational criteria for the types of additional measures to be incorporated into a project design to provide the requisite reasonable assurance.

Staff is working with DEP, the other water management districts, and a Technical Advisory Committee on development of a proposed unified statewide stormwater rule to provide updated water quality criteria, concentrating on nutrient load reduction, and to provide consistent water quality protection throughout the state. In the interim, this memorandum provides guidance on the types of additional measures which may be considered, on a project by project basis, as necessary to provide reasonable assurance that a project will not degrade an OFW and will not contribute additional causative pollutants to an impaired water body or other water body that does not meet state water quality standards.

Existing ERP Water Quality Requirements and Evaluation

Although Section 5.0 Water Quality Criteria in the Basis of Review (BOR) contains the standard water quality design requirements for an ERP, they are not the only water quality requirements in the BOR. There are other sections of the BOR that must also be considered when determining the amount of water quality treatment and types of source control (i.e. best management practices) that need to be provided to protect a specific water body. The design requirements in Section 5 need to be applied in conjunction with the water quality requirements in Section 4.0 Environmental Criteria.

While it is recognized that additional levels of protection are required when projects discharge to OFWs, many are not aware that the District's BOR also requires additional protective measures if ambient water quality for a particular site doesn't meet state standards. The technical information supporting the Verified List demonstrates that the impaired waters on the List constitute a category of water bodies which require such additional protective measures. The Verified List is the starting point for identifying water bodies which require additional protective measures, but there may be other water bodies that do not meet water quality standards and also require such protective measures. Staff may review available data concerning the water quality in the water body including the technical information supporting the Verified Lists, information provided by the applicant or from any other source to determine whether water quality standards are being met.

Section 5.1 and 4.1.1(c) of the BOR require that projects be designed and operated so that off-site discharges will meet state water quality standards, including compliance with the anti-degradation provisions applicable to OFWs. Section 5.9.1 specifies a more detailed evaluation by the District staff for new developments which outfall to sensitive receiving waters. Such sensitive receiving waters include all OFWs as well as other water bodies specifically named in the rule.

Section 4.2.4 states:

“...an applicant must provide reasonable assurance that the regulated activity will not violate water quality standards...”

“Reasonable assurance...must be provided both for short term (during construction) and long term (during operation). The following requirements are in addition to the water quality requirements found in section five of this Basis of Review.” (emphasis added)

In cases where a project is discharging to a water body that does not meet standards (i.e. an impaired water body or other water body that does not meet water quality standards), Section 4.2.4.5 requires that:

“...the applicant must demonstrate that the proposed activity will not contribute to the existing violation.”

Section 4.2.4.5 also states, “If the proposed activity will contribute to the existing violation, mitigation may be proposed as described in subsection 4.3.1.4.”

Section 373.414(1)(a)3, F.S.

In addition, where the applicant is unable to meet water quality standards because existing ambient water quality does not meet standards, Section 373.414(1)(a)3, F.S. states that the Governing Board shall:

“consider mitigation measures proposed by the applicant that cause net improvement of the water quality in the receiving body of water for those parameters which do not meet standards.”

Required Analysis

In order to demonstrate that the proposed activities will not contribute to an existing impairment of a water body, will not degrade an OFW, or will provide a “net improvement,” an applicant should provide reasonable assurance based on site specific information to demonstrate that discharges of the parameter or parameters which have caused the impairment do not have the potential to cause or contribute to water quality violations in the basin. This demonstration may be accomplished through the use of a site specific water quality evaluation.

Additional Source Controls, Best Management Practices and Other Protective Measures

Historically, the standard approach taken by applicants to provide such reasonable assurance for discharges to OFWs has been to provide an additional 50% water quality treatment. In light of the antidegradation requirements for OFWs and impaired waters applicants are encouraged to incorporate additional source controls, Best Management Practices (BMPs) and other protective measures in order to assist in providing reasonable assurance that the proposed activities will not contribute to an existing violation of water quality standards.

It is frequently desirable that stormwater treatment systems be designed in series as part of a BMP treatment train to increase the pollutant removal efficiency of the overall system. However, treatment efficiencies of BMPs in series must account for the reduced loading transferred to subsequent downstream treatment devices as well as irreducible concentrations of certain pollutants. After treatment occurs in the first system, a load reduction has occurred, which is a function of the type of treatment provided. After migrating through the initial treatment system, the remaining load consists of pollutant mass which was not removed in the initial system. This mass is then acted upon by the second treatment system with an efficiency associated with the particular type of BMP used until the irreducible concentration level is met.

When treatment systems are used in series, and a continuous model of the treatment systems is not used, the efficiency of the overall treatment train can be calculated using the following equation.

$$\text{Treatment Train Efficiency} = \text{Eff}_1 + [(1 - \text{Eff}_1) \times \text{Eff}_2]$$

If using this equation, particular attention must be paid to the treatment efficiency used for each downstream BMP to account for the diminishing "treatability" of stormwater as concentrations are reduced.

In addition to the extra 50% treatment volume for discharges to OFWs, impaired waters or other water bodies that do not meet water quality standards, the following is a list of options that applicants are encouraged to incorporate when evaluating a particular permit application that discharges to OFWs, impaired waters or other water bodies that do not meet water quality standards. A combination of these or other protective measures should be incorporated based on the specific project, water body, and pollutant causing or contributing to the impairment of a water body that does not meet state water quality standards or that might degrade an OFW.

- Stormwater pollution prevention plan (SWPPP) for construction activities resulting in greater than 1 acre of land clearing, soil disturbance, excavation, or deposition of dredge material. The plan should be prepared in accordance with good engineering practices and should identify the potential sources of pollution that may reasonable be expected to affect the quality of stormwater discharge associated with the construction activity. (See attachment 1 for an example plan)
- Post-construction pollution prevention plan to be submitted as part of the permit application, which provides details of controls and practices to be implemented after construction is completed to reduce or eliminate the generation and accumulation of potential stormwater runoff contaminants at or near their source. A post construction pollution prevention plan should include plans for surface water management system operation and maintenance, nutrient and pesticide management, solid waste management, and/or animal/livestock waste storage and disposal, if applicable. Records of maintenance, operation and inspection should be kept by the permittee and should be available for inspection and copying by the District staff upon request. (See attachment 2 for an example plan)
- Increased average wet season hydraulic residence time of wet detention ponds to at least 21 days using a maximum depth of 12 feet from the control elevation to calculate the residence time.

body (which by definition would mean in the same hydrologic basin), the project will not cause unacceptable adverse water quality cumulative impacts in the drainage basin.

Monitoring

Section 5.9.1(b) of the BOR states that WQ monitoring will be required if the project discharges to a sensitive receiving body and the applicant is unable to provide adequate assurance that degradation of the receiving body will not occur. Based on our long term experience with current water management system designs, we have not routinely required permit-level water quality monitoring. However, on a project by project basis there may still need to be water quality monitoring conditions incorporated in some permits depending on such factors as project type, proximity to the OFW or impaired water, and water quality treatment system design.

Consult with your supervisor and/or technical manager as you encounter project specific questions regarding application of the District's water quality monitoring requirements.

Attachments: Example Construction Pollution Prevention Plan
 Example Post-Construction Pollution Prevention Plan
 Draft Pervious Pavement Guidance Memorandum