Procedure for Environmental Resource Permit Water Quality Evaluations for Applications Involving Discharges to Outstanding Florida Waters and Water Bodies that Do Not Meet State Water Quality Standards

This procedure shall be utilized in coordination with the Environmental Resource Permit Applicant's Handbook Volume I (Volume I) and Applicant's Handbook Volume II for use within the South Florida Water Management District (District) (Volume II). This procedure pertains to the application of existing District rules in the evaluation of permit applications for projects which discharge to Outstanding Florida Waters (OFWs) and water bodies that do not meet State water quality standards identified on the state's "Verified List" of impaired waters or water bodies that have a state adopted Total Maximum Daily Load (TMDL) (impaired water bodies).

"Impaired Water Bodies"

Chapter 62-303, Florida Administrative Code (F.A.C.), describes impaired water bodies. Water bodies that have been assessed and determined to be impaired by the Department of Environmental Protection (DEP) 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 at: http://www.dep.state.fl.us/water/watersheds/assessment/a-lists.htm.

Relationship Between "Impaired Waters" and District Water Quality Rules

Chapter 62-303, F.A.C., does not limit the applicability of existing Environmental Resource Permit (ERP) rules and other criteria under other provisions of Florida law. Consequently, the District implements its existing rules to ensure non-degradation of OFWs and prevent further degradation of impaired water bodies.

This procedure highlights the requirements in the existing District ERP rules to meet water quality criteria. This procedure also provides additional measures which shall be considered, on a project by project basis, as necessary to provide reasonable assurance that new activities regulated pursuant to Part IV of Chapter 373, Florida Statutes will not degrade an OFW or will not contribute additional causative pollutants to an impaired water body.

Existing ERP Water Quality Requirements and Evaluation

The design requirements in Section 4, Stormwater Quality, of Volume II are applied in conjunction with the water quality requirements in Section 8, Criteria for Evaluation and Section 10, Environmental Criteria, Volume I.

Section 4.1 of Volume II requires that projects be "designed and operated so that off-site discharges will meet State water quality standards." State surface water quality standards are outlined in Chapter 62-302 F.A.C. and require that reasonable assurances be provided to ensure that proposed discharges do not cause or contribute to violations of State water quality standards. As a part of the review of ERP applications, the District evaluates whether discharges from a project will be directed to an OFW or a water body that has been identified as impaired pursuant Chapter 62-303, F.A.C. If a proposed project discharges to an OFW or an impaired water body, the District will require that additional protective measures be incorporated into the project's design and operation to provide reasonable assurance that the

proposed discharge will not cause or contribute to violations of state water quality standards. The additional protective measures shall include a site specific pollutant loading analysis and an additional 50% water quality treatment volume above the amounts required pursuant to Section 4.2.1, Volume II. Best management practices, source controls or protective measures shall be considered as discussed below.

Section~~s~~ 4.1, Volume II requires that "projects shall be designed and operated so that off-site discharges will meet State water quality standards." Section 4.1.3, Volume II, states that "systems which have a direct discharge to an OFW, must provide an additional fifty percent of the required treatment." Section 4.9.1, Volume II 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 this rule.

Section 10.2.4, Volume I states:

> An applicant must provide reasonable assurance that the regulated activity will not violate water quality standards.
>
> Reasonable assurance regarding water quality must be provided both for the short term and the long term . . . . **The following requirements are in addition to the water quality requirements found in sections 8.2.3 and 8.3 through 8.3.3. (emphasis added)**

In cases where a project will discharge to a water body that does not meet standards, Section 10.2.4.5, Volume I requires that:

> The applicant must demonstrate that the proposed activity will not contribute to the existing violation.

Section 10.2.4.5, Volume I also states, "If the proposed activity will contribute to the existing violation, mitigation may be proposed as described in subsection 10.3.1.4 (Volume I)."

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~~)(b)3, Fla. Stat., states that the Governing Board shall:

> consider mitigation measures proposed by or acceptable to 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

The applicant must submit the following for each project:

Construction Phase Pollution Prevention Plan

A 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 shall be prepared in accordance with recognized engineering

practices and shall identify the potential sources of pollution that shall reasonably be expected to affect the quality of stormwater discharge associated with the construction activity. (See pages H-7 through H-16 for an example plan)

Operation Phase Pollution Prevention Plan

A 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 shall 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 shall be kept by the permittee and shall be available for inspection and copying by the District staff upon request. (See pages H-17 through H-22 for an example plan)

Site Specific Water Quality Evaluation

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 shall 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 shall be accomplished through the use of a site-specific water quality evaluation.

Additional Source Controls, Best Management Practices and Other Protective Measures

In addition to the extra 50% water quality treatment volume for discharges to OFWs or impaired water bodies, a site specific water quality analysis is required. Before submitting an application, the applicant shall perform an initial site specific water quality analysis. The initial analysis must demonstrate that the proposed project's stormwater management system will not degrade an impaired water body or will provide a net improvement in an impaired water body for any parameters which are impaired. If the site specific water quality analysis does not demonstrate that an OFW will not be degraded or a net improvement will occur in an impaired water body, then additional protective measures are required. These protective measures shall consist of source controls, Best Management Practices (BMPs) or other protective measures. The applicant must then submit a site specific water quality analysis to the District that demonstrates that an OFW will not be degraded or that a net improvement will occur in an impaired water body of any parameter which is impaired.

Listed below are typical source and structural controls commonly incorporated into proposed project stormwater designs and site specific water quality analysis as a part of the evaluation of whether an applicant has provided reasonable assurance to demonstrate that a proposed activity will not degrade an OFW, or in the case of an impaired water body, will not contribute to a violation of the impaired parameter. Such evaluation must take into consideration the particular water quality parameter which is not being met in the water body and whether the proposed project will contribute to the continued violation. The listed additional protective measures are not considered exhaustive. The District will consider other protective measures

proposed by the applicant which include the necessary detailed documentation to demonstrate reasonable assurance that water quality standards will not be violated during construction and during long term operation. A combination of protective measures must be based on the proposed project, receiving water body, and specific pollutant(s) causing or contributing to the impairment of the receiving water body. Examples of protective measures are:

Increased Hydraulic Residence Time

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.

Pollutant Source Controls

Source controls typically include reduced turf coverage; native landscape plantings; stormwater harvesting and recycling; rooftop runoff management and recycling; pervious pavement (see pages H-23 through H-35 for suggested procedures); and vegetated non-turf buffers around detention/retention ponds.

Conveyance and Pretreatment BMPs

Stormwater conveyance and pretreatment BMPs typically include filter strips; vegetated stormwater inlets; vegetated swales; sediment trap structures such as baffle boxes; and dry retention or detention pretreatment.

Water Quality Treatment Enhancement

Stormwater treatment system enhancements typically include the use of on-site created wetlands in a treatment train as a polishing cell after primary treatment; detention ponds with littoral berms, settling basins or phyto-zones within the detention areas; planted wetland filter marshes just upstream of project outfall structures; detention ponds with increased effective treatment time by use of internal levees and/or berms and/or location of inflow and outflow structures to increase the flow path distance.

Treatment Efficiency of BMPs in Series

If a stormwater treatment system is designed in series as part of a BMP treatment train to increase the pollutant removal efficiency of the overall system, the 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 occurs, 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 shall be calculated using the following equation:

$$\textit{Treatment Train Efficiency} = Eff_1 + [(1 - Eff_1) \times Eff_2]$$

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.

Water Quality Mitigation

In cases where ambient water quality does not meet state water quality standards and it is determined that the proposed activity will contribute to the violation (e.g., the water body is impaired for nutrients and the proposed project will discharge an increased nutrient load), Section 373.414(1)(~~a~~(b)3, Fla. Stat., and the Section 10.3.1.4. Volume I include provisions for water quality mitigation that will cause a net improvement. Water quality mitigation can be accomplished in a variety of ways. The typical concept is to provide net improvement through implementation of a water quality treatment system or retrofit of an area that currently discharges untreated stormwater runoff to the same receiving body as the proposed project. The type of land use, runoff rates, removal efficiencies and the pollutants expected from the mitigation area all must be compared to the proposed activity to assure the proposed mitigation is sufficient to cause a net improvement in the receiving water. Any areas used for off-site treatment must include a perpetual easement for this purpose, over the off-site treatment area, which cannot be amended, altered, released or revoked without the prior written consent of the District.

Water Quality Monitoring

Section 4.9.1(b), Volume II states that "new projects entailing a more intensified land use, such as industrial parks, and planning to discharge to a sensitive receiving water directly or indirectly, shall be required to institute a water quality monitoring program if the applicant is unable to provide adequate assurances (by such means as routing drainage of areas where polluting materials would be located away from the stormwater management system; developing restrictive covenants, or similar documents, which would have the effect of prohibiting polluting materials on the project site or proposing other methods of assurance that degradation of the receiving body water quality will not occur." Based on fact that permits are not typically issued without an applicant providing the reasonable assurances discussed in Section 4.9.1, Volume II and the District's long-term experience with current water management system designs, the District has not routinely required permit-level water quality monitoring. However, on a project by project basis water quality monitoring conditions will be incorporated in permits, when necessary to meet Section 4.9.1(b), Volume II, depending on such factors as project type, proximity to an OFW or sensitive water body, and water quality treatment system design.