

GUIDANCE FOR ENTITIES ESTIMATING URBAN NONPOINT SOURCE LOAD REDUCTIONS

PREPARED FOR LAKE JESUP BMAP TECHNICAL WORKING GROUP DRAFT - MAY 2008

Background: This document provides guidance on the type of urban stormwater best management practices (BMPs) that are eligible for nutrient pollutant reduction credit in the Lake Jesup BMAP. All of this information will ultimately be integrated in the project implementation spreadsheets currently under development by the Jesup BMAP stakeholders and used in calculation of required reductions achieved by allocation entities. Consistent with the Consumptive Use and In-Lake Restoration Issue Paper (May 2008), eligible projects must treat external TP loads into Lake Jesup.

Structural Urban Stormwater BMPs: The following structural urban stormwater BMPs are eligible for credit in the Lake Jesup BMAP:

- Dry retention
- Wet retention/detention
- Wet detention
- Swales
- Second generation baffle boxes
- Alum injection
- Stormceptor units (provisional, pending outcome of Sanford monitoring data)

These represent the suite of structural stormwater BMPs that have demonstrated their effectiveness at removing TP from stormwater. A wide variety of other stormwater BMPs exist. However, these BMPs have not been proven effective at nutrient removal through real-world monitoring data applicable to Florida.

Calculation of Structural Project Benefits: Calculating the benefits of structural BMPs is a two-step process: 1) calculate pre-treatment load and 2) calculate treatment efficiency (% TP removal). To calculate pre-project loads, entities are asked to provide the treatment area (as noted on the project data collection template). Entities may be further asked to provide a spatial reference for the project so that the TMDL pollutant loading model can be used to estimate the pre-project loading from the project area. This will maintain consistency across jurisdictions and with the TMDL. If entities prefer to submit independent pre-project loading calculations, they may do so but will be asked for detailed information to justify these calculations.

To calculate treatment efficiencies, Eric Livingston (FDEP) is developing detailed guidance on calculation of pollutant reductions for the Jesup basin. This information will provide percent reductions in TP associated with the above suite of BMPs. This will provide consistency in calculation of pollutant reductions from both completed projects that do not have project-specific data available as well as future projects designed to meet entity allocations.

- Where project-specific information exists (e.g. completed projects), entities should use the project-specific design/engineering information as supporting documentation for the pollutant loading calculations.
- Any projects completed as part of a “treatment train” should be identified as such on the project sheets. Benefits of projects early in the train will be propagated downstream along with the appropriate treatment efficiency percentages. Projects not identified above that treat external TP loads may be eligible for credit, but would need to be

considered on a case-by-case basis. Similarly, most retrofitting projects will have lower removal efficiencies than BMPs designed for new development since land typically is limited which means design factors such as treatment volume, residence time, etc. do not meet presumptive criteria set forth in SJRWMD rule 40C-42 and the corresponding Applicant's Handbook. For those projects that do not meet the presumptive design criteria, lower treatment efficiencies will be site-specific and will be estimated based on design information above that must be provided for each project.

Design Factors: For retention and wet detention projects, quantification of the expected nutrient load reductions are dependent upon the project's design criteria.

Although this information is not needed on the project spreadsheets submitted to DEP, please be prepared to provide the following details for each project submitted. These details may be needed by DEP or your fellow Working Group members as project suites for the Jesup BMAP are evaluated. For projects wherein an entity prefers to submit detailed justification of higher pollutant reductions than identified by the standard pollutant reduction tool, or for projects that do not fit the assumptions made in development of that tool, these are the details that will be needed to facilitate project evaluation.

BMP	DESIGN CRITERIA FACTORS
Dry retention	Drainage area treated (acres), impervious acres treated, project curve number, treatment volume (acre feet), on-line vs off-line, infiltration rates, drawdown time
Wet retention/detention	Drainage area treated, impervious acres treated, project curve number, treatment volume, on-line vs off-line, infiltration rates, drawdown time, volume infiltrated vs detained
Wet detention	Drainage area treated (acres), impervious acres treated, project Curve Number, treatment volume (acre feet), wet season and annual residence time (days), littoral zone (Yes/No), % area in littoral zone, pond depth (ave/max), drawdown time (hrs), stormwater reuse (Yes/No), reuse rate (inches/week), pretreatment? BMP Treatment Train?
Swales	Drainage area treated (acres), impervious acres treated, project curve number, treatment volume (acre feet), on-line vs off-line, infiltration rates, drawdown time presence of swale blocks
Second generation baffle boxes	Drainage area treated (acres), impervious acres treated, project Curve Number, On line versus Off line, Flow (cfs)
Alum injection	Drainage area treated (acres), Impervious acres treated, project Curve Number, alum dosage (mg/l), alum floc capture/disposal method. Note: if associated with a wet detention system, provide details on design as requested above
Stormceptor Units	Drainage area treated (acres), impervious acres treated, project Curve Number, On line versus Off line, Flow (cfs)

Septic Tank BMPs: Areas served by septic tanks within 200m of a surface waterbody in the Jesup watershed (consistent with the Jesup TMDL) that are converted to central sewer will be eligible for up to 100% credit, depending on how the effluent is treated (re-use versus surface discharge). Effluent that results in surface discharge will be provided reduced (i.e. less than 100%) credit in the BMAP.

Low Impact Development (LID) Projects: Many entities in the Jesup watershed have implemented low impact development principles as part of their stormwater management projects. Credit will be given for LID practices that either: 1) were not credited in the original ERP permit calculations; or 2) are part of a retrofit project that improves current treatment levels. Credit for LID projects will be evaluated on a case-by-case basis, as LID projects tend to be unique in design.

Nonstructural Urban Stormwater BMPs: Current scientific understanding precludes our ability to quantify the benefits of nonstructural urban stormwater BMPs (e.g. street sweeping, public education, etc.) in the first iteration of the Lake Jesup BMAP. DEP is working with the Florida Stormwater Association to develop information on nutrient reductions from nonstructural BMP, street sweeping, and catch basin inserts. However, calculation of entity-specific required reductions for this first iteration of the BMAP will take this into account. This will be further discussed with the Working Group at a later date.