



CHARLOTTE HARBOR NATIONAL ESTUARY PROGRAM
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November 19, 2007

Eric Livingston
Bureau of Watershed Management
2600 Blair Stone Road (MS3510)
Tallahassee, Florida 32399-2400

Re: "Evaluation of Current Stormwater Design Criteria in Florida."

Dear Mr. Livingston:

The Charlotte Harbor National Estuary Program (NEP) is a partnership program, created by Section 320 of the Clean Water Act, to protect and preserve the Charlotte Harbor estuary, recognized as an estuary of national significance and one of the most productive estuaries in Florida. Since 1996, the Charlotte Harbor NEP has developed and adopted a *Comprehensive Conservation and Management Plan* (CCMP) for the estuary and its watershed. This plan was developed utilizing four committees of citizens, scientists, resource managers, industry representatives and policy makers. Our partnership includes, among others, Lee, Polk, Manatee, Sarasota, Hardee, DeSoto, and Charlotte Counties; several cities; the U.S. Environmental Protection Agency; the Florida Fish and Wildlife Conservation Commission; the Florida Department of Environmental Protection; both Southwest and Central Regional Planning Councils; and both the South and the Southwest Florida Water Management Districts.

The Charlotte Harbor NEP's Management Conference has reviewed "Evaluation of Current Stormwater Design Criteria within the State of Florida." The Charlotte Harbor NEP commends both you and your agency on your efforts to address the degrading water quality throughout the State of Florida. As evidenced by the number of impaired water bodies in Florida, the current presumptive standards are not working, especially with regard to nutrients. Our own repeated analyses reveal significant increasing trends in nutrients and suspended matter and declining conditions coincident with development trends within the Charlotte Harbor NEP Study Area (see Janicki Environmental Inc 2003 and 2007).

The Charlotte Harbor NEP provides the following general and specific comments for the 2007 report "Evaluation of Current Stormwater Design Criteria within the State of Florida," by Harvey H. Harper and David B. Baker:

- The implementation of the methodology recommended in the Report by the State has the potential to derail superior methods of controlling pollution such as those demonstrated in the draft SFWMD Basin Rule. There are many tools to treat polluted stormwater other than dry retention and wet detention that need to be implemented to achieve nutrient and suspended matter reduction. We applaud the goal of no net increase in pollutant loadings from pre-development to post-development conditions

and suggest a “grocery-list” of methods specific to each region, such as that used in the draft SFWMD Basin Rule. There was some treatment of several other removal methods in this Report; however, this treatment was much less robust than the treatment of commonly used existing systems. The evaluation of alternatives should be greatly strengthened.

- The methodology in this report should consider “pre-development” as natural environmental conditions (i.e., native uplands and wetlands) and should calculate pollutant loadings for such. Instead this report treats “pre-development” as existing conditions by comparing post-development hydrologic and land use conditions with anticipated pollutant treatment removal efficiencies, thereby essentially “grandfathering” existing levels of pollution. We are concerned that the existing levels of pollution will become a property right that travel with the land. It provides an incentive to place lands under the most polluting land uses allowable prior to seeking development permits. It has also been demonstrated throughout Florida that existing water quality conditions frequently do not meet current water quality standards.
- According to Figure 3-4 of the Report, southwest Florida as designated by the Ft Myers gage, receives rainfall amounts over 1 inch per event almost 15% of the time. Thus, design criteria standards should exceed the 1 inch criteria in this region. It is difficult to determine if this is the case in the report’s proposed criteria.
- The mean treatment efficiencies for wet detention systems listed in Table 5-2 based upon previous work does not match either the report text or Table 5-5. For example, the mean removal efficiency for TSS in Table 5-2 is listed as 77%, while in the text and in Table 5-5, it is listed as 85%. Since the latter number is then used throughout the report as the TSS removal efficiency for wet detention systems, this discrepancy needs to be explained. Similar issues arise for other variables discussed.
- The decline in efficiency of wet detention systems over time is not incorporated into this report potentially allowing this type of treatment too much credit for treating pollution. As these systems age, they become less effective and are often a source of pollution in Southwest Florida. We also recommend that standards of maintenance be included in the report so that decline in efficiencies can be minimized.

- We recommend the use of treatment trains in which other removal strategies are included so that a minimum of 80% to 95% removal efficiency can be attained. The *National Pollutant Removal Performance Database*, Version 3, released in September 2007 by the Center for Watershed Protection, provides information regarding pollutant removal efficiencies of different techniques. In addition, “*Comparative Pollutant Removal capability of Stormwater Treatment Practices*” from Article 64 of Technical Note #95 from Watershed Protection Techniques 2(4): 515-520 provides additional information on the regarding pollutant removal efficiencies of different techniques. Best Management Practice (BMP) pollutant removal efficiencies vary widely and most studies focus on “best condition” value. Most studies in the National Pollutant Removal database focus on BMPs that were constructed within three years of monitoring (Winer 2000).

Median Pollutant Removal Efficiencies

	TSS	TP	TN	Bacteria	Copper
Infiltration	89%	65%	42%	N/A	86%
Filtering	86%	59%	32%	37%	37%
Wet pond	80%	52%	31%	70%	57%
Wet swale	81%	24%	56%	-25%	65%
Wetland	72%	48%	24%	78%	47%
Bioretention	59%	5%	46%	N/A	81%
Dry pond	49%	20%	24%	88%	29%

*From Center for Watershed Protection

	TSS	TP	TN	Bacteria	Copper	Lead
Infiltration	95%	70%	51%	N/A	N/A	98%
Filtering	86%	59%	38%	37%	49%	84%
Wet pond	79%	49%	32%	70%	57%	74%
Wetland	39%	49%	30%	78%	40%	68%
Dry pond	7%	19%	5%	70%	26%	54%
Wet swale	31%	-16%	-9%	5%	14%	17%

*From Watershed Protection Techniques

- Finally, we are concerned about the construction of deep wet ponds as the primary BMP because of the likely connection to our high water table in southwest Florida.

We recommend that the methodology provided in the “Evaluation of Current Stormwater Design Criteria within the State of Florida” be improved by incorporating a more robust evaluation of other methods included in the draft SFWMD Southwest Florida Basin Rule and Low Impact Development (LID) methods. Furthermore we recommend an independent peer review of the document to ensure an unbiased scientific assessment of the methodology presented within. An independent peer review will assist in improving this important document.

If you have any questions, please contact me at (239) 338-2556 or at lbeever@swfrpc.org.

Sincerely,

A handwritten signature in black ink that reads "Lisa B. Beever". The signature is fluid and cursive, with the first name "Lisa" and last name "Beever" clearly legible.

Lisa B. Beever, PhD, AICP
Director

cc: Governor Charlie Crist
Secretary Michael Sole

References

Janicki Environmental Inc. 2003a. Water quality data analysis and report for the Charlotte Harbor National Estuary Program, August 27, 2003. Available from the Charlotte Harbor National Estuary Program, Fort Myers, FL.

Janicki Environmental Inc. 2007. Water quality data analysis and report for the Charlotte Harbor National Estuary Program, July 27, 2007. Available from the Charlotte Harbor National Estuary Program, Fort Myers, FL.

Winer, R. 2000. *National Pollutant Removal Database for Stormwater Treatment Practices*. Second edition. Center for Watershed Protection. Ellicott City, MD.