

Watershed Council

Southwest Florida Watershed Council, Inc.

P.O. Box 61063, Fort Myers, FL 33906-1063

www.swfwc.org

October 11, 2011

Mr. Eric Shaw
Environmental Manager
Standards & Assessments Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 6511
Tallahassee, FL 32399-2400

Re: Southwest Florida Watershed Council Comments on the Proposed Estuarine Numeric Nutrient Criteria for Chapters 62-302 and 62-303, F.A.C.

Dear Mr. Shaw,

The Southwest Florida Watershed Council, an organization of diverse stakeholders formed in 2001 to protect the water resources of the Caloosahatchee and Big Cypress Watersheds, submits the following comments regarding the estuarine numeric nutrient thresholds proposed in FDEP's Numeric Nutrient rule language. While we commend the CHNEP for its extensive review and comment on the numeric nutrient thresholds developed by their consultant and proposed to DEP for your consideration, we are concerned with the lack of sufficient public and stakeholder involvement. We are also enclosing our previous letter to CHNEP, which explains other concerns we have as well with regards to the technical merits of the proposed estuarine thresholds.

The CHNEP's Technical Advisory Committee, which includes volunteer experts drawn from a wide range of entities and with an extensive knowledge of the resource and of the relevant analytical methods, held multiple open meetings which other stakeholders were entitled to attend, and where the merits and limitations of the proposed criteria were discussed. Several members of the Watershed Council participated in this process and can attest that, while these meetings were open to the public, they did not constitute an organized effort to seek out, acquire, and consider the positions of all the relevant stakeholders in the Charlotte Harbor service area, and the open discussions were not designed to in any way accommodate the stated positions of any of the stakeholders who chose to attend.

The CHNEP TAC itself, while it draws its membership from the best technical experts, is designed to provide technical feedback on the validity of the analyses and on the effect of the proposals on the resource; it is not a forum for input from those stakeholders nor is it constituted to include all the stakeholders whose positions are relevant to the proposed criteria. CHNEP open meetings to date do not constitute the kind of structured outreach and comment period on the criteria that would fulfill DEP's standard public process of acquiring and considering comments from stakeholders when proposing regulatory action such as these criteria for nutrients in estuarine waters of southwest Florida.

Therefore, we object to DEP's intent to adopt these proposed criteria in the absence of a vigorous and structured action to acquire and consider comments from stakeholders, and we firmly believe that the proposed two-week public comment period does not constitute that effort. Accordingly, we urge DEP to

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remove the proposed estuarine numeric nutrient thresholds from its proposed rule language and address them in a separate subsequent round of rule revisions; in order to allow for serious consideration of input such as that in our enclosed letter, and more meaningful public participation in their development.

Our detailed comments on the nutrient criteria development deficiencies are attached herewith in our letter to Dr. Lisa Beever dated September 30, 2011, for your review.

Thank you for your consideration.

Sincerely,

Greg F. Rawl, Chairman
Southwest Florida Watershed Council

cc w/ enc Hershel Vinyard, DEP
 Drew Bartlett, DEP
 Bob Perciasepe, EPA
 Ephraim King, EPA
 Nancy Stoner, EPA
 Gwen Keyes Fleming, EPA
 Jim Giattina, EPA

The mission of the Southwest Florida Watershed Council is to protect, conserve, manage and/or restore the land and water resources of the Caloosahatchee and Big Cypress Watersheds. Through increased awareness, participation and cooperation among all stakeholders in consensus building, planning and decision making, we are working to meet the economic, natural and cultural needs for this and succeeding generations.

September 28, 2011

Lisa B. Beever, PhD, AICP, Director
Charlotte Harbor National Estuary Program
1926 Victoria Avenue
Fort Myers, FL 33901

Re: Southwest Florida Watershed Council Comments on the CHNEP's Proposed Estuarine
Numeric Nutrient Criteria

Dear Dr. Beever:

This letter is written to provide comments on estuarine numeric nutrient criteria developed by Janicki Environmental for the Charlotte Harbor National Estuary Program's study area, which was recently approved by both the Technical Advisory Committee (TAC) and the Management Committee (MC). The Southwest Florida Watershed Council is concerned that the selected values were generated by a relatively weak model and that the resulting criteria may not be fully protective of estuarine waters within the CHNEP study area.

The primary goal of developing numeric nutrient criteria should be to improve and/or maintain healthy estuarine conditions, not just to generate regulatory goals. The process as described to both the TAC and MC uses a relatively weak model because even with years of data, using mostly monthly sampling, the results constitute only a generalized approximation of the long-term average nutrient concentrations averaged across spatially complex and highly variable ecosystems.

The chosen model uses the reference approach, whereby a historical period that is well represented by data is presumed to be indicative of desired conditions in the future. Of the three broad conceptual approaches to developing criteria that were considered in the report (mechanistic, regression and reference), the reference approach is considered the least reliable.. Some of the estuarine systems addressed here are known to be degraded at present, such that selecting targets based on recent historical conditions it is highly questionable. We recognize that the report uses different statistical measures to select targets differently for those estuarine systems considered in need of 'restoration' as opposed to 'protection,' in the report's terminology. Still, the approach necessitates drawing data from these systems only in their degraded conditions, and judgment of how those data relate to the desired 'restored' condition is purely guesswork.

The report provides results including both concentration and load, as required by the Clean Water Act, therefore the report meets the minimum statistical requirement of CHNEP's charge. Our objection is that the numbers are shown with exaggerated accuracy, and precision was not

reported in the presentations nor in the written report. Table 1 below, reprinted from the report to both committees before the respective meetings, and shows the results as presented.

Table 1

| CHNEP NNC for TN & TP Based on Concentration & Loadings | | | | |
|---|---------------------|------------------|-----------------------|--------------------|
| | TN Conc. mg/l | TP Conc. mg/l | TN Load tons/yr | TP Load tons/yr |
| Dona/Roberts | .42 | .18 | 250 | 48 |
| Upper Lemon | .56 | .26 | 102 | 18 |
| Lower Lemon | .62 | .17 | 136 | 21 |
| Charlotte Harbor | .67 | .19 | 5,987 | 2,281 |
| Tidal Myakka | 1.02 | .31 | 1,407 | 351 |
| Tidal Peace | 1.08 | .50 | 4,343 | 1,960 |
| Pine Island S | .57 | .06 | 190 | 8 |
| Matlacha Pass | .58 | .08 | 216 | 24 |
| San Carlos Bay | .56 | .07 | TBD | TBD |
| Tidal Caloosahatchee | TBD | TBD | TBD | TBD |
| Estero Bay | .63 | .07 | 587 | 61 |

We recognize that more powerful models require considerably more data to describe this complex system, and those data are not available at present; the presented results may well be ‘the best we can do’ in the required decision time frame. However these results should be presented, and used, as interim guidelines with considerable uncertainty. It is unlikely that the results of the analysis, as tabulated and presented in the report (Table 1), are based on data that are representative of the unknown real values. With a necessarily low confidence level and therefore a wide confidence interval for the central tendency of nutrient concentrations in the ecosystem, it is highly questionable that these approximations for conditions in the recent past will be protective of the natural system for the immediate future. Results should at minimum be presented with a clear indication of their uncertainty. Better, the uncertainty should be explicitly considered when selecting recommended targets, such that where uncertainty is greatest the targets should be selected nearer the low end of the confidence limits, because the overriding goal should be protection of the ecosystem. Because of the uncertainty, the selected targets should be accompanied by a stated need to monitor the response of the ecosystems after the target is promulgated, and a need to re-evaluate of the targets in light of that response.

A further inappropriate use of the data given the uncertainty surrounding the values in Table 1 is the promotion of a 2-in-5 year recurrence interval requirement for a violation. The targets were selected based on the central tendency of the data, in this case annual average concentration over the long term. The uncertainty described above is exacerbated by the fact that the data were drawn from at most a recent 14-year period of record. During the 14-years period of record, the nine agencies whose data were used in the Janicki report collected 48,192 Dissolved Oxygen observations from 19,777 sampling stations and a comparably large number of Total Nitrogen observations. We recognize the number of observations is very large, which supports detailed statistical analysis. However this data was not collected with an integrated design that we can expect to be representative of spatial or temporal variation, so the detailed statistics are valid only for this particular sample and it is not known how well it represents actual environmental conditions over the period of sampling or into the future.

It is not clear that meeting this highly approximate condition, even on an average basis for every year in the future, will succeed in protecting the resource. Selecting a target for annual average conditions, while allowing permissible violation in 40% of all years (2-in-5 year recurrence), is a recipe for continuing degradation of the resource. If the target is designed to accommodate years of unusual high load, in response to hurricanes or other disturbances, then the annual-average target should not be selected from the annual average observed in recent years; it should be substantially lower to accommodate periodic high-load years. If the target is selected from the annual average observed in recent years, then it should be specified as a moving average over some period of years, so that violations are specified based on all years, including hurricane years, and a violation should be specified based on nutrient conditions over the multi-year long term, which is believed to best describe the health of the ecosystem. A suggestion was made to the TAC that the violation should be specified as a 1-in-3 year recurrence interval exceedance period, rather than 2-in-5. That suggestion, rejected by the TAC, would not remove the above described limitations, but at least would have delineated a more stringent violation definition which would avoid the adverse more frequent exceedances.

If the concentrations and loads were used as a first estimate with some assurance that future efforts would improve the estimate, then an argument could be made for selecting any reasonable numbers as a first step. A system allowing refinement of this first estimate would have to be created. However, the numbers are being proposed for regulatory purposes, and therefore should be selected in a way that promotes protection of the resource, not merely estimates the central tendency of an altered system condition over the last 14 years. Because the weakest model was utilized for the evaluation and the data collection methods and period of record do not adequately describe the estuarine system, there exists a considerable uncertainty in the model estimates. Since the Clean Water act requires the criteria be selected to protect and hopefully move the ecosystem in the direction of restoration, we can only conclude that these estimates are not suitable for promulgating regulatory criteria.

Thank you for your consideration.

Sincerely,

Greg Rawl, Chairman
Southwest Florida Watershed Council

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