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Mr. Michael A. Babb, Chair
Governing Board, Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899

March 28, 2016

Re: Florida Springs Council Comments Concerning Gum Slough Minimum Flows and Levels

Dear Chairman Babb and Members of the Governing Board,

We thank the District staff and Governing Board members for this opportunity to offer comments to the record on the subject rule development. Development of staff recommendations has been a long arduous process which illustrates the sometimes problematic nature of the undertaking.

We find the revised recommendations from staff (Addendum FINAL DRAFT, Version 2) to maintain a minimum of 94% of historic flow a substantial improvement over the original position. Modification of the previous peer reviewed recommendation of 91% of flow is a rational step in the process if for no other reason than the period of record suggests a 9% taking of system flow can be reasonably construed to result in no flow scenarios during prolonged drought.

There remain issues at hand with the documented findings which are within the authority of the Governing Board to address and they are presented herein without priority implied. We ask that they be carefully considered prior to making a final decision regarding this proposed rule.

1. While not unique to this system, or the fault of staff, the data base for the Gum Slough system is scant. It is notable that staff constructed flow analysis based on the long term historical record from Rainbow Springs coupled with more recent Gum Slough basin data. Relevant to this point is that given only a few additional years of local data, staff determined that an increase in flow protection was warranted, hence the recommended change from 9% to 6% flow reduction in the proposed rule. What this suggests is that an enhanced data set, even for a relatively short time period had significant influence on staff recommendations.

It is recognized that MFL rule development is based on the "best available information", but the question is raised as to whether the data set is adequate to allow the Board to make a well-founded decision. If there remains uncertainty about quality of the data set it is prudent to err on the side of caution and consider additional buffer until a more substantial data base exists.

2. The core NDM program is not intended to model the complexity of Florida's karst geology for a site specific evaluation. In fact, there are cautions within the NORTHERN DISTRICT GROUNDWATER FLOW MODEL; VERSION 4.0 (HydroGeoLogic, Inc.) Section 4.7 which specifically address this issue. See the following excerpts from the Model Limitations section.

"Potential users of the NDM should note that because of recognized data deficiencies, model simulation is more appropriate at the sub-regional and regional scales rather than at the local or site-specific scales for simulation of hydrologic conditions."

No objection is presented adverse to NDM 4 for its broader intended application, but we are greatly concerned that the small size of the Gum Slough Basin presents potential conflict with the cautionary note above. The basis of this concern is found within further dialog which follows:

“A 6-percent error resulted between the steady-state observed and simulated spring discharges and a 4-percent error resulted between observed and simulated base flow.”

“Even though the model appears to adequately represent the general groundwater-flow patterns and fluxes within the Northern District, there are some areas within the model domain where model errors are significant.”

Table 4.7 lists steady-state simulated and observed spring discharge rates in the Northern District Model domain. The range of error listed for discharge in the table ranges from 0% to 190% for the population. The error for Gum and Alligator Springs is 4% and 14% respectively. We note the larger percentage errors are generally associated with lower volume flow systems and there appears to be an inverse correlation between flow and magnitude of the error. This presents a degree of uncertainty which suggests that great caution is warranted in development of these rules, and with specificity for the Gum Slough system.

The Florida Springs Council (FSC) views protection of spring systems as a highest priority action due to their favorable support of sustainable economic activity and overall benefit to the people of the state. We are supportive of the MFL intent and processes used to formulate attendant rules. At the same time, we recognize limitations and constraints associated with the process and as a result find need for great caution in developing such rules. As example; in transition from NDM3 to NDM4, District staff found significant error in the earlier version which was used to develop MFL Rules for Chassahowitzka and Homosassa Springs.

NDM3 estimated anthropogenic related flow reductions of 1.1 % on the Homosassa River system and 0.9% on the Chassahowitzka River system. NDM4 estimated anthropogenic related flow reductions 2.2% on the Homosassa River system and 1.7% on the Chassahowitzka River system. Model estimates with such incongruity (~100%) do not inspire confidence.

Considering HydroGeoLogic's acknowledged 6% inaccuracy of the NDM's ability to predict spring specific discharges, we strongly urge extreme caution on all MFL rule development based on the NDM macro-model.

There is uncertainty associated with data set limitations and model function in the process at hand. The District is constrained in its regulation for a variety of reasons, one of which is the threshold at which permitting for consumptive use is required. While staff can estimate consumption of groundwater via private wells, the District has little regulatory authority over such development activity. Commitment of a segment of groundwater supply for beneficial use is a largely irrevocable act. Such action(s) based on thin data sets or razor thin margins of calculation presents potential for significant and lasting harm to Gum Slough Spring and other spring systems across the region.

The District's mandated Areas of Responsibility include the protection of natural systems. It is our sincere belief that regulatory actions such as MFL rules are best viewed and constructed as an act of perpetuity, not something that requires recurrent maintenance or recovery actions. There are other water supply sources within the Northern Region which can support beneficial use with far less potential for adverse impact.

Recommendations:

1. The FSC recommends that a shorter review cycle for this rule be considered. We suggest that in light of the magnitude of amendment to the proposed rule by staff over the course of its development, that a period of 5-7 years is more appropriate.
2. We recommend that no additional flow reduction be allowed, holding the line at a maximum of 3 cfs reduction to average system flows. The recommendation is not made lightly. We recognize staff estimates of anthropogenic impact currently stand at 3.4% of average flow or approximately 3 cfs. This

recommended moratorium on issuance of additional groundwater pumping permits is warranted based on the analysis of baseline flows by Intera and District staff and on the described imprecision of the NDM v.4. Such a limit will provide a buffer until additional data or enhanced modeling substantiates rule modification to the contrary.

Sincerely,



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