



THE INSTITUTE FOR
**WATER AND ENVIRONMENTAL
RESILIENCE**
STETSON UNIVERSITY

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Via email: Moira.Homann@dep.state.fl.us.

Dear Ms. Homann:

We are in receipt of the revised Draft Basin Management Action Plan (“BMAP”) for Volusia Blue Spring as required by the Florida Springs and Aquifer Protection Act, Fla. Stat. § 373.801 (2018) (“Springs Act”), and we are pleased to have the opportunity to provide comments.

Restoration of Florida’s springs is a focus area for the Institute for Water and Environmental Resilience at Stetson University (“the Institute”). Faculty and students have participated as interested stakeholders in rule development for minimum flows and levels (“MFL”), total maximum daily loads (“TMDLs”), and the BMAP for Volusia Blue Spring. Faculty and students have also undertaken monitoring and research on springs issues over a number of years. Biological monitoring by Stetson faculty was a component of the MFL regime for Volusia Blue Spring adopted by SJRWMD. We have participated as a stakeholder in BMAP meetings and filed comments for earlier versions of the BMAP.

The Institute fully participates with the Blue Spring Alliance (“the Alliance”), which is a collaboration of interested stakeholders concerned about Volusia Blue Spring. The Alliance conducts educational programs and activities associated with the springs, and it engages the public accordingly. We acknowledge Alliance representatives’ significant participation in BMAP meetings and collaboration on these and previous comments. Accordingly, we are authorized to say the Alliance joins in these comments.

We are also appreciative that Secretary Noah Valenstein and Division Director Tom Frick met with us and other stakeholders on campus to discuss our concerns regarding Volusia Blue Spring. To that end, we specifically appreciate the improvements DEP made to the draft based on discussion in our meetings. We believe that we all share a goal of restoration of Volusia Blue Spring.

Volusia Blue Spring is an internationally known iconic Florida spring. It is a first magnitude spring and the largest along the St. Johns River. It was first documented by William Bartram in the 18th Century and made famous by Jacques Cousteau in 1971. It has been a Florida State Park since 1972, and it is consistently among the top ten visited units of the system with over 500,000 annual visitors. It has also been designated as critical habitat for manatees pursuant to the Endangered Species Act. A MFL including a recovery plan has been adopted for the spring, and a TMDL has been adopted to address its designation as impaired under the Clean Water Act. The BMAP is required to address the impairment as well as to comply with the Springs Act.

Upon review of the draft BMAP for Volusia Blue Spring, we have concluded that it does not meet the requirements of Florida Law as set forth in Fla. Stat. § 373.801 and § 403.067(7). In our opinion, the BMAP does not identify sufficient management strategies, nor a financially feasible plan or set of projects, which will reduce nutrient loading to Blue Spring and achieve the water quality TMDL restoration target for the monthly average of nitrate-nitrite of 0.35 mg/L. Our concerns with the draft BMAP can be summarized as follows:

Compliance with the law The Springs Act lays out specific requirements for what must be included in springs BMAPs. For example, “a list of all specific projects and programs identified to implement a nutrient total maximum daily load,” including a priority ranking, a cost estimate, and a nutrient load reduction target for each, are required. We find these requirements to be lacking in the draft BMAP.

Overly optimistic assumptions. Nitrogen-reducing benefits from many listed projects, particularly those critical to meeting the 20-year targets, appear to be significantly exaggerated.

Failure to deal with septic tanks. While the BMAP shows septic tanks to be the largest single source of nitrogen to the spring, there are no specific projects listed to reduce pollution from septic tanks.

Nitrogen Source Information Loading Tool. NSILTs are being used to estimate the amount of nitrogen which various sources are contributing to groundwater, but they are not being used to calculate how much nitrogen must actually be reduced at the land surface. As a result, estimates of the amount of nitrogen that must be reduced to reach the 20-year goals are significantly underestimated.

Growth. The draft BMAP generally fails to account adequately for future growth in the springshed.

Failure to Comply with Springs Act

The Springs Act requires any first magnitude spring deemed impaired to adopt a BMAP. Fla. Stat. §403.067(7) requires a BMAP to include “the appropriate management strategies...to achieve total maximum daily loads.” Table 3 shows—without any supporting reference—the estimated nitrogen load to groundwater by source in the BMAP area to be 514,094 lb-N/yr (“lbs”). Draft Volusia Blue Spring Basin Management Action Plan, 21 (FDEP May 2018)

(hereinafter “Blue Spring BMAP”). Language in Sec. 2.1.3 includes various assumptions including nitrogen attenuation factors which are also not explained or referenced. *Id.* at 21–23. Table 4 shows the total reduction required to meet the TMDL as follows:

Total load at spring vent	162,550 lbs
TMDL Load	100,897 lbs
Reduction Required	61,653 lbs

In calculating loads at the spring vent, DEP fails to acknowledge or explain the approximately 68% reduction in nitrogen that occurs from the groundwater to the spring vent. By failing to take into account this reduction in its management strategy, DEP erroneously assumes a 1:1 ratio between credits to the groundwater and credits to the spring vent. In doing so, it drastically understates the reduction required. Accordingly, the appropriate management strategy should be to calculate the required load reduction at the surface, including the average attenuation factor, in order to achieve the intended result of the TMDL.

We have struggled to completely understand the relationship between nutrient loads at the surface, at the groundwater, and at the spring vent, and how this relationship accounts for average attenuation factors. In our previous comments, we proposed a different required reduction based on analysis of our Fulbright Scholar Shih-hsiung Liang, Ph.D and and were pleased to see his analysis essentially confirmed by Volusia County and Save the Manatee Club. We were pleased to see revisions to this formula in the current BMAP, but the numbers still do not add up.

In our attempt to understand these average attenuation factors, we found the analysis by Dr. Xueqing Gao, Ph.D, of Florida Department of Health to be the most comprehensible explanation. [“Better Understanding the Impact of Onsite Sewage System on Quality of Florida Groundwater and Springs,”](#) Bureau of Environmental Health, Presentation at Karst Symposium, Florida State University, (November 3, 2017):

First, estimate by comparing spring vent load with spring vent TMDL (TMDL/SVL).
 Next, estimate by comparing NSILT loads with spring vent TMDL (TMDL/NSILT).
 Lastly, estimate by comparing spring vent load with spring vent TMDL and apply percentage to NSILT loads.

<i>TMDL/SVL</i>	$100,897/162,550=62\%$
<i>TMDL/NSILT</i>	$100,897/514,094=19\%$
<i>(TMDL/SVL) x NSILT load</i>	$514,094 \times 62\% = 318,738 \text{ lbs}$
Required Reduction	$514,094 - 318,738 = 195,356 \text{ lbs}$

Clearly, a significantly larger amount of nitrogen must be reduced at the surface to translate into achieving TMDL load at the spring vent. Based on the data provided in the BMAP and supporting documents, it appears nearly 70% reduction of Nitrates is required at the surface in order to achieve the TMDL. Because the BMAP significantly understates the amount of

nitrogen reduction required to reach the TMDL, it does not meet § 403.067(7)'s requirement to identify sufficient management strategies.

The draft BMAP is also deficient in that it does not meet the minimum requirements for development of projects and programs to implement TMDLs. Fla. Stat. § 373.807(1)(b) sets forth the requirements for a BMAP for an OFS as follows:

- (b) A basin management action plan for an Outstanding Florida Spring shall be adopted within 2 years after its initiation and must include, at a minimum:
 1. A list of all specific projects and programs identified to implement a nutrient total maximum daily load;
 2. A list of all specific projects identified in any incorporated onsite sewage treatment and disposal system remediation plan, if applicable;
 3. A priority rank for each listed project;
 4. For each listed project, a planning level cost estimate and the estimated date of completion;
 5. The source and amount of financial assistance to be made available by the department, a water management district, or other entity for each listed project;
 6. An estimate of each listed project's nutrient load reduction;
 7. Identification of each point source or category of nonpoint sources, including, but not limited to, urban turf fertilizer, sports turf fertilizer, agricultural fertilizer, onsite sewage treatment and disposal systems, wastewater treatment facilities, animal wastes, and stormwater facilities. An estimated allocation of the pollutant load must be provided for each point source or category of nonpoint sources; and
 8. An implementation plan designed with a target to achieve the nutrient total maximum daily load no more than 20 years after the adoption of a basin management action plan.

The proposed BMAP includes the items listed in 1,2, and 7, but is deficient as to items 3,4,5,6 and 8. The draft BMAP does not provide a priority rank for each listed project, but instead it categorizes projects as either "low," "medium," or "high" priority based solely on whether the projects have begun or not. Blue Spring BMAP at 46. Further, the draft BMAP fails to list the planning level cost estimate for six of the fifteen uncompleted listed projects, and it fails to list the estimated date of completion for seven of those projects. *Id.* at 47-52. The draft BMAP also neglects to identify the source and amount of financial assistance for all but one listed project that is not complete. *Id.* Additionally, as argued above, the draft BMAP fails to estimate each listed project's load reduction accurately because it erroneously assumes a 1:1 ratio between reduction of nitrogen at the aquifer and at the vent.

Most importantly, the draft BMAP does not identify sufficient projects to reduce nutrient loading in order to achieve the TMDL. The BMAP lists projects which it indicates would reduce nutrient loading from between 169,714-225,162 lbs per year. *Id.* at 27. Compounding the problem, nearly 40,000 lbs of those credits are based on a WWTF project that contains no planning information besides placeholders like "TBD". *Id.* at 52. This vague and optimistic projection is illustrative of why the BMAP's projects are insufficient to hit the high end of its projections and achieve the 195,356 lbs-N/yr reduction necessary to achieve TMDL.

Deficiencies in OSTDS Remediation Plan.

The management strategy posited for OSTDS in Sec. 2.4 is also deficient because it fails to sufficiently address existing septic tanks in the PFA by relying too heavily on conversion—rather than replacement—of these systems. *Id.* at 27–29. A fair reading of the draft BMAP leads one to the conclusion that the TMDL cannot be achieved for Volusia Blue Spring without a significant focus on OSTDS, or septic tanks.

Number of OSTDS in PFA:	26,000
Per Capita nutrient load of septic tank:	9.012
Number of people per septic tank:	2.0
Total nutrient load of 26,000 septic tanks in PFA:	468,624 lbs

We do not believe TMDL levels can be achieved without a plan that addresses connection of significant percentage of these septic tanks to advanced wastewater treatment. Much of the area within the Blue Spring BMAP area has suburban densities and intensities that would ordinarily warrant treatment in a WWTF. Indeed, much of the Blue Spring springshed is in the City of Deltona, now the largest city in Volusia County.

The BMAP places most of its emphasis on conversion of existing OSTDS on lots of less than one acre within the PFA to enhanced treatment septic tanks over a 20-year period. The OSTDS Remediation Plan is very clear that after July 1, 2018, new septic tanks are prohibited on lots of less than one acre within the PFA unless an enhanced treatment OSTDS is used. *Id.* at 54. The policy, however, should also include a statement that no new septic tanks will be permitted if a wastewater treatment line is “available”, as required by law. Fla. Stat. § 381.0065.

We believe this additional statement is important in light of recent actions by the City of Deltona. A significant number of OSTDS are located in Deltona on lots with a suburban density of less than one acre in size. On May 21, 2018, the Deltona City Commission adopted [Ordinance 11-2018](#) which clearly states that under no circumstances will the City force a customer to connect to the City’s sewer system. This appears to be inconsistent with § 381.0065, which essentially requires hookup with public sewer once it is available. To allow Deltona to “opt-out” of this requirement could effectively impede the restoration of Volusia Blue Spring.

Further, the Remediation Plan is vague as to when the requirement for conversion of existing OSTDS to enhanced treatment septic tanks will take place. Per section D.1.2, “[the Remediation Plan] begins following completion of the master wastewater treatment feasibility plans, rulemaking, and funding milestones included in Sections D.3 and D.4, but no later than five years after BMAP adoption.” Blue Spring BMAP at 55–56.

First, there appears to be no requirement for a wastewater treatment feasibility plan. Sec. D.1 merely states that local governments are encouraged to develop wastewater master plans. *Id.* at 54. In our meeting with Tom Frick, it was even suggested that DEP could provide grant funds to

local governments to incentivize the 20-year master plans. In any event, there is no guarantee that this will occur, and there is no express incentive or requirement to make it occur before five years.

Next, there is no explanation of what kind of “rulemaking” is required. The BMAP will be adopted by rule, but Sec. D.1 seems to imply that additional rulemaking, by perhaps DOH, may be required. *Id.* at 55–56. Without further explanation, we are left to conclude that the “rulemaking” pertains to current revisions to [64E-6.009](#) F.A.C. Alternative Systems and [64E-6.012](#) F.A.C. Standards for the Construction, Operation, and Maintenance of Aerobic Treatment Units. This rulemaking is required in order to permit enhanced septic systems.

Lastly, there are no “funding milestones” identified in Sections D.3 and D.4, so we do not exactly understand what this phrase pertains to. *Id.* at 57–62. Taken as a whole, we see no reason why the requirement for enhanced OSTDS cannot take place immediately, or at least upon the adoption of the DOH rules, which appears imminent.

Fla. Stat. § 373.807(3) requires the OSTDS remediation plan to “... identify cost effective and financially feasible projects necessary to reduce the nutrient impacts...and [to] be completed and adopted as part of the basin management action plan required by the first 5-year milestone...” The proposed BMAP does not identify an effective and financially feasible list of projects necessary to reduce nutrients from OSTDS. While the plan attempts to satisfy this requirement by referencing Sec. 2 and Appendix B, only two projects are listed that address OSTDS pollution, and neither of these have any funding information or an estimated completion date. Blue Spring BMAP 47–52, 56.

Overly optimistic assumptions

As noted, the OSTDS policies result in overly optimistic assumptions about nutrient reduction. This is true for other proposed credits for nutrient reduction. Fertilizers are a case in point. The proposed BMAP gives credit to Volusia County for adoption of a Florida friendly model ordinance plus a ban on summertime application. However, Deltona exempted itself from the ordinance, and while it adopted the Model Ordinance, it did so without the summertime ban. Further there are no educational announcements on Deltona’s web site as to the requirements of its fertilizer ordinance. Giving credit for adopting an ordinance that is out of step with the remainder of the springshed is an example of overly optimistic reductions identified in the plan.

Failure to Account for Future Growth

The BMAP fails to identify how future grow will affect the restoration efforts. Deltona and DeLand are among the fastest growing segments of Volusia County. Because many of our local governments have not developed sufficient infrastructure to keep up with growth, there has been a continuous growth of OSTDS. The most recent census of septic tanks in Volusia County shows 99,710 OSTDS and growing. The Volusia Blue Springshed includes a significant density of septic tanks in the City of Deltona outside the PFA on lots less than one acre. This area will continue to grow and add nutrients to the aquifer. The BMAP fails to take this increase of nutrients into consideration. Given the importance of the restoration of this spring, we think it

prudent that the OSTDS Remediation Plan contain additional policies to require all new septic tanks and repairs of septic tanks on lots of less than once acre to require enhanced treatment septic tanks.

KUDOS to Volusia County, City of DeLand, and SJRWMD

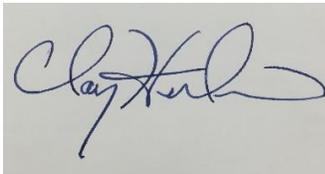
During the development of the BMAP both DeLand and Volusia County have upgraded their Wiley Nash WWTF and Southwest Volusia Water Reclamation Facility to AWT standards. Further, Volusia has decommissioned Four Towns WWTF and now sends that waste to the AWT plant. DeLand and Volusia County should also be commended for applying and receiving a significant 319 grant for nonpoint source educational projects to promote water conservation and more responsible uses of fertilizers and septic tanks. DeLand and Volusia County have also been successful in obtaining Springs Initiative Funding for projects designed to implement portions of the recovery plan for Blue Spring. We urge DeLand and Volusia County to continue to be leaders for restoration of Blue Spring and to call upon elected leaders throughout West Volusia to cooperate to undertake the actions necessary to restore Volusia Blue Spring.

Until then, and for the reasons set forth above, we believe that the draft BMAP for Volusia Blue Springs will not lead to its restoration. We hope that the department can take another look at the draft BMAP prior to the statutory deadline and include policies and steps that will make restoration a more likely outcome.

Lastly, we acknowledge that an ongoing commitment will be required of all stakeholders to successfully carry out the BMAP and associated restoration activities. The Institute and the Blue Spring Alliance intend to continue to participate in education and scientific programs and projects intended to support conservation and restoration of Blue Spring.

Volusia Blue Spring is one of the crown jewels of the Florida Park Service. It is managed well by dedicated employees of the Department of Environmental Protection. It deserves the highest level of protection, and its conservation and restoration should remain a priority for the State of Florida.

Very truly yours,



Clay Henderson
Executive Director

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