



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

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Moira R. Homann  
Watershed Planning and Coordination Section  
Division of Environmental Assessment and Restoration  
Florida Department of Environmental Protection  
Mail Station #3555  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Via email: [Moira.Homann@dep.state.fl.us](mailto:Moira.Homann@dep.state.fl.us).

Re: DeLeon Springs BMAP

Dear Ms. Homann:

We are in receipt of the revised Draft Basin Management Action Plan (“BMAP”) for DeLeon Springs 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. 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 DeLeon Springs.

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 DeLeon Springs among others. To that end, we specifically appreciate improvements DEP made to the draft based on discussion in our meetings. We believe that we all share a goal of restoration of our local springs.

DeLeon Springs is a second magnitude spring and one of six Outstanding Florida Springs designated by the Florida Legislature as part of the Springs Act. § 373.801. The springs and adjacent lands were acquired by Volusia County in the 1980’s and transferred to the State Park Service which has operated the area as DeLeon Springs State Park ever since. DeLeon Springs has been listed as impaired under the Clean Water Act due to high levels of nutrients. Since adoption of the Springs Act, a MFL was adopted by the SJRWMD, and TMDLs were adopted by DEP. The BMAP is a culmination of that effort as required by the Act.

Upon review of the draft BMAP for DeLeon Springs, 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 DeLeon Springs and achieve the water quality TMDL restoration target for the monthly average of nitrate-nitrite of 0.35 mg/L. The BMAP is based upon best case scenarios for management strategies and does not contain a single project that will actually reduce nutrient loads at DeLeon Springs. Our concerns with the draft BMAP can be generally 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. We find these requirements to be lacking in the draft BMAP.

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 not specific projects listed to reduce pollution from septic tanks in order to achieve TMDL.

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

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.

### **Failure to comply with Springs Act**

The draft BMAP does not identify sufficient management strategies, as required by the Springs Act, because the plan significantly understates the amount of nitrogen reduction necessary to meet the TMDL. 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 205,708 lb-N/yr (“lbs”). Draft DeLeon Spring Basin Management Action Plan, 22 (FDEP May 2018) (hereinafter “DeLeon BMAP”). Language in Sec. 2.1.3 includes various assumptions including nitrogen attenuation factors which are also not explained or referenced. *Id.* at 22–24. Table 4 shows the total reduction required to meet the TMDL as follows:

Total load at spring vent	31,852 lbs
TMDL Load	14,657 lbs
Reduction Required	17,195 lbs

In calculating loads at the spring vent, DEP fails to acknowledge or explain the approximately 84% 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 load.

In our attempt to understand these average attenuation factors, we found the analysis by Dr. Xueqing Gao PhD 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), <http://earth.eoas.fsu.edu/~mye/2017KarstSymposium/Gao.pdf>.

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>	14,657/31,852=46%
<i>TMDL/NSILT</i>	14,657/205,708 =7%
<i>(TMDL/SVL) x NSILT load</i>	205,708 x 46%= 94,626 lbs
Required Reduction	205,708 – 94,626 = 111,082 lbs

Total load within BMAP area	205,708 lbs
Required Reduction	111,082 lbs
TMDL Load	14,657 lbs

Thus, while the BMAP is premised on a required reduction of 17,195 lbs, the plan should be based on a required reduction of many times that amount to meet the designated TMDL. Clearly, a significantly larger amount of nitrogen must be reduced at the surface to translate into achieving TMDL at the spring vent. 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 categorizes projects as either "low," "medium," or "high" priority based solely on whether the projects have begun or not. DeLeon BMAP at 46. Further, the BMAP does not list the planning level cost estimate for any project, and half of the listed projects that have not been completed have no estimated date of completion. *Id.* at 47. The BMAP also fails to identify the source and amount of financial assistance for every project that has not been completed. *Id.* Additionally, the BMAP fails to estimate each listed project's nutrient load reduction accurately because it erroneously assumes a 1:1 ratio between reduction of nitrogen at the aquifer and at the vent, as demonstrated above.

Most importantly, the draft BMAP does not identify a single project other than public education and the fertilizer ordinance to reduce nutrient loading in order to achieve TMDL. Oddly, the project list does not include the conservation easement and closure of the Fieser Dairy Farm, which was approved for \$2.5 million in Springs Funding in 2017. The BMAP lists projects which are in reality management strategies that set forth a best-case scenario for reduction of nutrient loads by 44,123-58,845 lbs. *Id.* at 27. This is far less than the reduction required to achieve TMDL.

### **Deficiencies in OSTDS Remediation Plan**

A fair reading of the draft BMAP leads one to the conclusion that TMDL cannot be achieved for DeLeon Springs without a significant focus on OSTDS. The BMAP indicates there are 3892 septic tanks within the DeLeon Springs PFA that contribute over 20% of nitrates to the spring. *Id.* The draft BMAP indicates significant reductions in Nitrates can occur by replacement of these septic tanks with wastewater treatment. *Id.* at 53. Nevertheless, there are currently no public wastewater treatment lines or facilities within the DeLeon Springshed, and none are

planned. The area is more rural than suburban with densities that do not support extension of wastewater treatment lines.

Based upon assumptions in the BMAP as to the number of septic tanks and loading, we think the following is correct:

Number of OSTDS in PFA:	3892
Per Capita nutrient load of septic tank:	9.01
Number of people per septic tank:	1.97
Total nutrient load of 3892 septic tanks in PFA:	69,097 lbs
65% reduction by conversion to enhanced treatment systems:	44,913 lbs.

The BMAP places most of its emphasis on conversion of existing OSTDS 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 49. The Remediation Plan is vague as to when the requirement for conversion of existing OSTDS to enhanced treatment septic tanks will take place. Per Sec. D.1.2, “[the remediation policy] 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.” *Id.* at 50.

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 49. In our meeting with Tom Frick, it was even suggested that DEP could provide grant funds to local governments incentivize the 20-year master plans. In any event, there is no guarantee that this will occur, and there are no express incentives or requirements 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 50. 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 Sec. D.3 and D.4, *Id.* at 52–56, so we do not exactly understand what this phrase pertains to. 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.

Fl. Stat. § 373.807(3) requires the OSTDS remediation plan to “... identify cost effective and financially feasible projects necessary to reduce the nutrient impacts...and [those projects] shall 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 a single project necessary to reduce nutrients from OSTDS, and thus it fails to comply with this requirement. DeLeon BMAP at 27.

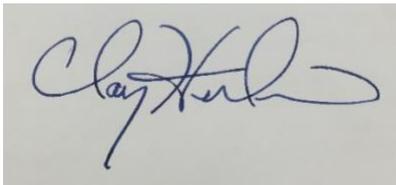
**Overly Optimistic Assumptions**

The BMAP’s management strategy regarding Agricultural Sources is also deficient because it is based on overly optimistic assumptions. The BMAP places great emphasis on agricultural practices, including BMPs and something it calls “beyond BMPs.” *Id.* at 27, 73–74. As noted in the BMAP, there are 10,410 acres of agricultural land within the Springshed. *Id.* at 32. At present, only 3,514 acres, or 34%, have enrolled in BMPs. *Id.* Clearly, some nutrient reductions can be achieved by enrolling all agricultural land in the BMP program, but we question whether the “beyond BMPs” will be embraced by the types of small farms in this area. Our concern is exacerbated by DEP’s admission that “[a]ctual implementation [of “beyond BMPs”] would require funding as well as a more detailed design based on specific information.” *Id.* at 73. Accordingly, we find it difficult to assume that 11,584-20,851 lbs of credits can be achieved for these advanced agricultural practices. *See id.* at 27.

We do strongly urge DEP and SJRWMD to continue to work with Fieser Dairy to successfully implement a dairy closure plan and conservation easement on this livestock intense use because of its close proximity to the springs. As noted above, this project was included by DEP in its Springs Initiative for 2017 and is fully funded. This project would go a long way towards reducing the 8% livestock waste component of the nutrient load to the springs.

For these reasons we believe that the draft BMAP for DeLeon 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.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Clay Henderson", is displayed on a light gray rectangular background.

Clay Henderson  
Executive Director

Institute for Water and Environmental Resilience  
Stetson University  
421 N. Woodland Blvd. Unit 8262  
DeLand, Florida 32723