Alachua County
Environmental Protection Department

Stephen Hofstetter, *Director*

May 9, 2025

Florida Department of Environmental Protection

Re: 2025 Santa Fe River Basin Management Action Plan

To Whom it May Concern,

Thank you for this opportunity to continue to provide comments on the 2025 Draft Santa Fe River Basin Management Action Plan (BMAP). Alachua County is committed to protecting and improving water quality within this basin. The comments below summarize some of our concerns with the draft document. The attached document outlines our technical concerns with the methodology used to calculate and assign allocations and load reductions.

The document is inconsistent on requirements for new septic systems/OSTDS within the BMAP area and/or PFAs. Alachua County supports requiring DEP-approved enhanced nutrient reducing systems regardless of lot size for all new systems within the whole BMAP area. While some areas, like Poe Springs, are currently not impaired, adding this protection will help protect water quality and prevent future degradation and the need for costly projects. Additionally, having different requirements for different sub-basins creates unnecessary confusion for residents, contractors, and regulators.

The document seems to lack requirements for upgrading existing septic systems/OSTDS and suggests that local governments should adopt ordinances. Adopting such would be timely and challenging for local governments and would likely not be adopted in the BMAP area outside of Alachua County. To ensure existing systems are upgraded, Alachua County strongly recommends FDEP add requirements to this document, as it has done in the Silver basin, to upgrade all existing systems within the BMAP to DEP-approved enhanced nutrient reducing systems meeting 65% nitrogen reduction as these systems come in for repairs, modifications, and/or replacements. Alachua County has been offering 50% rebates for upgrades (up to $10,000) for two years and participation has been very low. Voluntary measures will not achieve the required reductions. It will be essential to continue to provide funding for these upgrades to offset costs for homeowners and to ensure compliance with the permitting process.

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The BMAP draft states that local governments were not required to do the OSTDS and Wastewater Treatment Facilities plans because of the relatively low loading rate from these sources. Alachua County was notified by FDEP that we were required to provide these reports, and did so prior to the deadline.

The document states that the Columbia Springshed has yet to be delineated. Mapping this springshed should be a priority for FDEP to help guide future policies and projects.

The timeline to meet the 100% milestone is unrealistic due to the lack of source specificity provided in the BMAP and because allocations were not assigned until 2025.

While the BMAP identifies sources of nutrients it does not provide detailed information on where these sources are located. This lack of information has required considerable staff time and resources and has delayed our ability to meet deadlines.

Documented behavior change projects should receive more credit than traditional education efforts.

Alachua County utilized 319 funding to develop a research-based fertilizer campaign that is reducing fertilizer use throughout the County. Alachua County, the City of Gainesville, and FDOT have contributed over $121,000 in paid media since the creation of the campaign which has resulted in over 22 million impressions. Survey data was combined with the very models that yielded BMAP loading and allocations (NSILT and Simple Model) to estimate that the first year of the campaign resulted in total nitrogen reductions of over 8,000 pounds to surface waters and 12,000 pounds to groundwater. The “removal” costs per pound of nitrogen ranged from $1.31 to $8.28 compared to up to $500 per pound for construction projects, demonstrating that it is much more cost effective to prevent pollution than to remove it from an impaired watershed. However, the current crediting system of limiting outreach credit to 6% of the total loading from urban sources, disincentivizes behavior change education programs, since these campaigns require funding that is instead allocated to less effective projects for the goal of receiving reduction credits.

Ordinances should not be lumped with Outreach for providing credit.

Alachua County has one of the most protective fertilizer ordinances in the state with a prohibition on fertilizer with nitrogen from July – February. The County actively implements this ordinance by notifying property owners and businesses about the ordinance. Signage is provided to all stores selling fertilizer. During routine inspections,

staff discusses the ordinance and reviews records of landscaping companies. The current crediting process combines ordinances and outreach and limits credit to 6% of the total loading from urban sources, which disincentivizes committing staff resources to implementing the ordinance.

Local government project options are often limited to addressing septic systems, which are not going to achieve allocations.

During public meetings and stakeholder meetings, FDEP encourages local governments to reach out to the Department for assistance with identifying projects to achieve nutrient reductions. It has been suggested that Alachua County focus on connecting septic systems to regional wastewater collection facilities (which Alachua County does not operate) or to upgrade to Enhanced Nutrient Reducing systems (ENR). Connecting to centralized sewer systems is very expensive (especially when systems are far apart, as they are in this basin), and most residents do not want to connect because they will then have monthly wastewater fees.

Additionally, depending on the location of the septic system each upgrade results in 1 to 7 lbs of nitrogen reduction credit. To put this in perspective, Alachua County has been allocated 17,674 pounds of nitrogen in the Devils Ear Springshed, upgrading all of the known and likely systems in this springshed would achieve only 61% of our allocation in this springshed.

Agricultural Best Management Practices (BMP) monitoring and verification needs to be performed by FDEP. The largest loading source in this basin is from agriculture livestock operations and farm fertilizer. Reductions and resulting credits from these sources rely on the implementation of BMPs. The effectiveness of the BMPs has not been verified by FDEP, which is a critical need if we are to improve water quality.

We appreciate the opportunity to share our concerns about these water resources that are vital to our local economy and ecology. Please contact Stacie Greco, Water Resources Program Manager, at Sgreco@alachuacounty.us or 352-264-6829 for additional information.

Sincerely,

Stephen Hofstetter

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SH/SG/sg

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Florida Department of Environmental Protection
Proposed Basin Management Action Plan
for the Santa Fe River
Review Comments on Behalf of Alachua County
May 9, 2025

In April 2025, the Florida Department of Environmental Protection (FDEP) released the draft Basin Management Action Plan (BMAP) update for the Santa Re River basin and associated springs. This BMAP update was developed to meet the requirements of the Florida Springs and Aquifer Protection Act (Chapter 373, Part VIII, F.S.). As part of the new BMAP update, FDEP assessed water quality in 6 Outstanding Florida Springs (OFS) in the Santa Fe River BMAP area, including: Columbia, Devil's Ear, Hornsby, Treehouse, Poe, and the Ichetucknee Spring Group. FDEP assessed the data and determined that all of these OFS are impaired for the nitrate form of nitrogen, except for Poe Spring. The 2025 draft BMAP update was specifically developed to address the implementation of projects that reduce nitrogen loads to groundwater so that water quality at these impaired springs may be improved.

The County acknowledges that nitrogen load reductions in the Santa Fe River basin are required to meet current TMDL requirements both in the Santa Fe River and at the 5 impaired OFS. However, the County has concerns regarding the methodology that was utilized to develop the 2025 draft BMAP update. It is essential to utilize a scientifically sound approach so that responsible entities can correctly locate and implement cost effective projects to achieve our shared water quality goals. We respectfully request that FDEP reconsider their methodology to ensure alignment with Section 403.067 (F.S.), which requires equitable allocation of pollutant load reductions for stakeholders. Formal comments are provided below which describe these concerns. These comments are summarized as follows:

1) The County has concerns regarding the estimation of required reductions for springs and areas located outside the springsheds.
2) The County has concerns regarding the use of NSILT to estimate loads in areas located outside the springsheds.
3) The County disagrees with the assumption that Columbia Spring receives significant loads from areas that are within the BMAP boundary and outside the springsheds.
4) The County has concerns regarding the inclusion of the Poe Springshed in load calculations for areas outside the springsheds.
5) The County has concerns regarding the grouping of springs to calculate loads and required reductions for areas outside the springsheds.
6) The County disagrees with the decision to change the inclusion dates for completing nutrient reduction projects to meet the existing TMDL.

Comment 1: Outside the Springshed Loads and Reductions

The draft BMAP area includes many springs, some of which have defined springsheds while others do not. Defined springsheds are shown in **Figure 1** below, which was taken from the draft BMAP document. Areas "outside the springsheds" include all yellow shaded areas within the BMAP boundary. The County has overarching concerns about the inclusion of areas located "outside the springsheds" to estimate loads and

required load reductions to groundwater. This concern is described generally here but is reflected in many of the comments below as well.

In the way FDEPs methodology for estimating loads and associated reductions for areas located "outside the springsheds" is presented, it seems there is an assumption that if a spring does not have a defined springshed, then it must receive flow from ALL AREAS that are outside of the existing defined springshed bounds, but still within the BMAP boundary. An extreme example of this is that septic system loads to the groundwater near Lake Santa Fe are assumed to be contributing to elevated nitrate at the Columbia Spring vent, which is over 30 miles away.

It is important to consider the different geologic formations in the Santa Fe basin as these directly affect aquifer recharge (see **Figure 2**; UF, 2005). The Upper Santa Fe basin sits atop the nearly impervious Hawthorn formation (a geologic formation of clay, quartz sand, carbonate, and phosphate), which is perched well above the Floridan Aquifer. This confining layer limits aquifer recharge and discharge along this stretch of the river. The Upper Santa Fe and the Lower Santa Fe are neatly divided by the Cody Scarp, which runs through O'Leno State Park. Here the Santa Fe River flows underground for three miles before re-emerging at River Rise Preserve State Park. Aquifer confinement in the Lower Santa Fe basin either thins or is completely absent, allowing increased aquifer recharge and discharge. The draft BMAP recognizes these differences in hydrology by stating:

"*The western portion of the Santa Fe River…has high groundwater recharge and soil conditions that tend to leach nitrogen. In the eastern portion of this area, upstream of the River Sink, the hydrology is more dominated by surface water flows to tributaries of the Santa Fe River*."

Given these significant differences in hydrology, we suggest that, in the absence of a defined springshed, it is unreasonable to assume that loads to the groundwater in the Upper Santa Fe basin will significantly contribute to elevated nutrient concentrations at spring vents in the Lower Santa Fe basin.

The draft BMAP reports the "outside the springsheds" area as 550,985 acres, which is larger than the sum total of all other springshed areas (535,789 acres; **Table 1**). Accordingly, the County has broad concerns that the contributing area for springs outside the springsheds is being significantly overestimated, resulting in overestimates of NSILT loads to these springs and an unequitable allocation of required reductions to stakeholders. Since FDEP is required to equitably allocate pollutant load reductions per Section 403.067 (F.S.), we therefore suggest that all load estimates and required reductions for areas "outside springshed areas" should be removed from the draft BMAP. Loads should be recalculated and reallocated based upon defined springsheds and delineated loading areas rather than grouping areas "outside of the springshed" together. If a spring vent is not meeting the TMDL target of 0.35 mg/L nitrate and it is not within a defined springshed, then a springshed for that spring vent should be delineated and load reductions should be confined to that defined springshed. Entities should not be allocated nutrient reductions for areas without defined springsheds.

Table 1: Acreage for each springshed in the BMAP area (source: FDEP 2025 draft BMAP)

Geographic area	Devil's Ear Springshed	Hornsby Springshed	Ichetucknee Springshed	Outside the Springsheds
Acreage	218,014 acres	77,551,	240,224	550,985

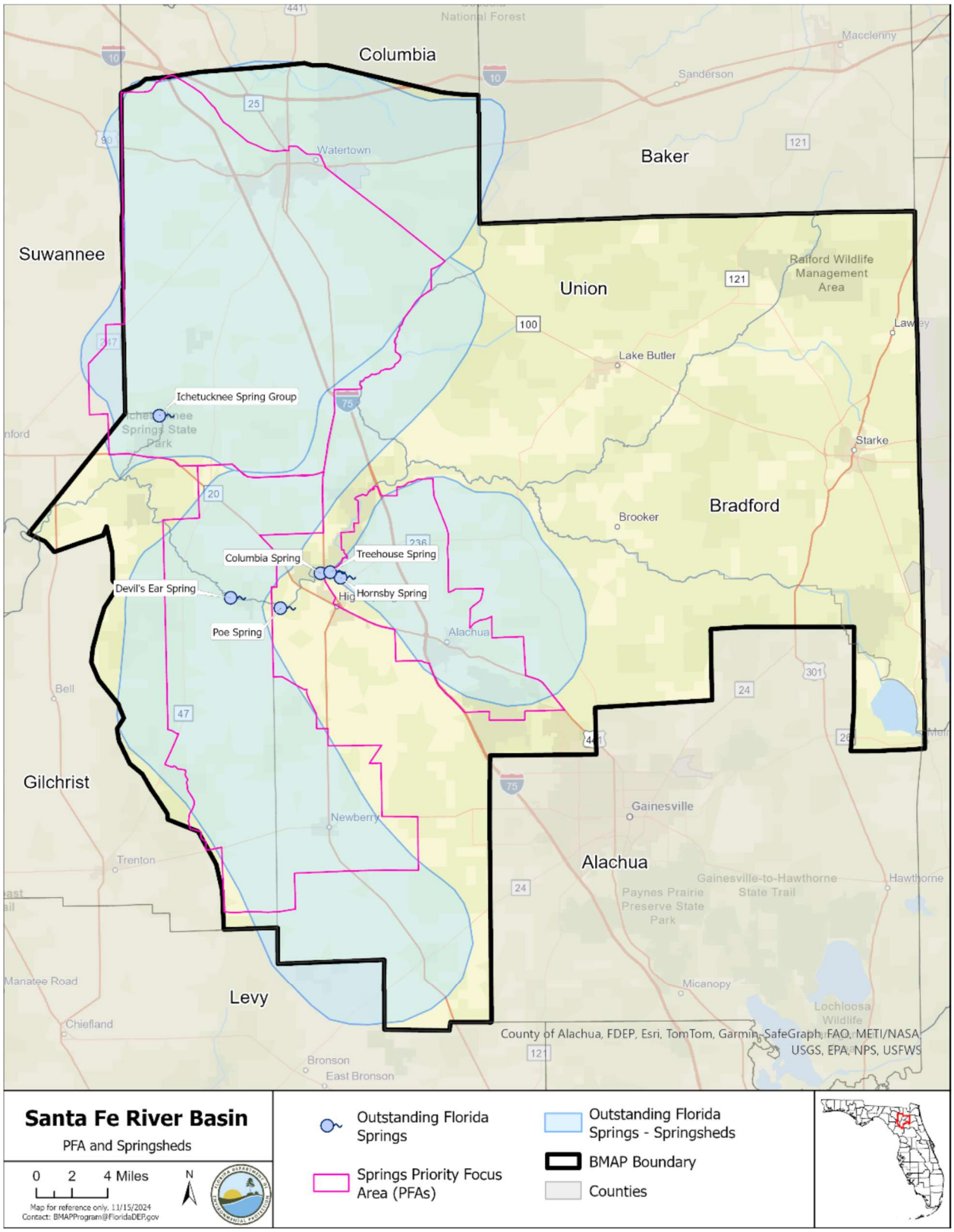

Figure 1: Santa Fe River BMAP and PFA Boundaries (source: FDEP 2025 draft BMAP)

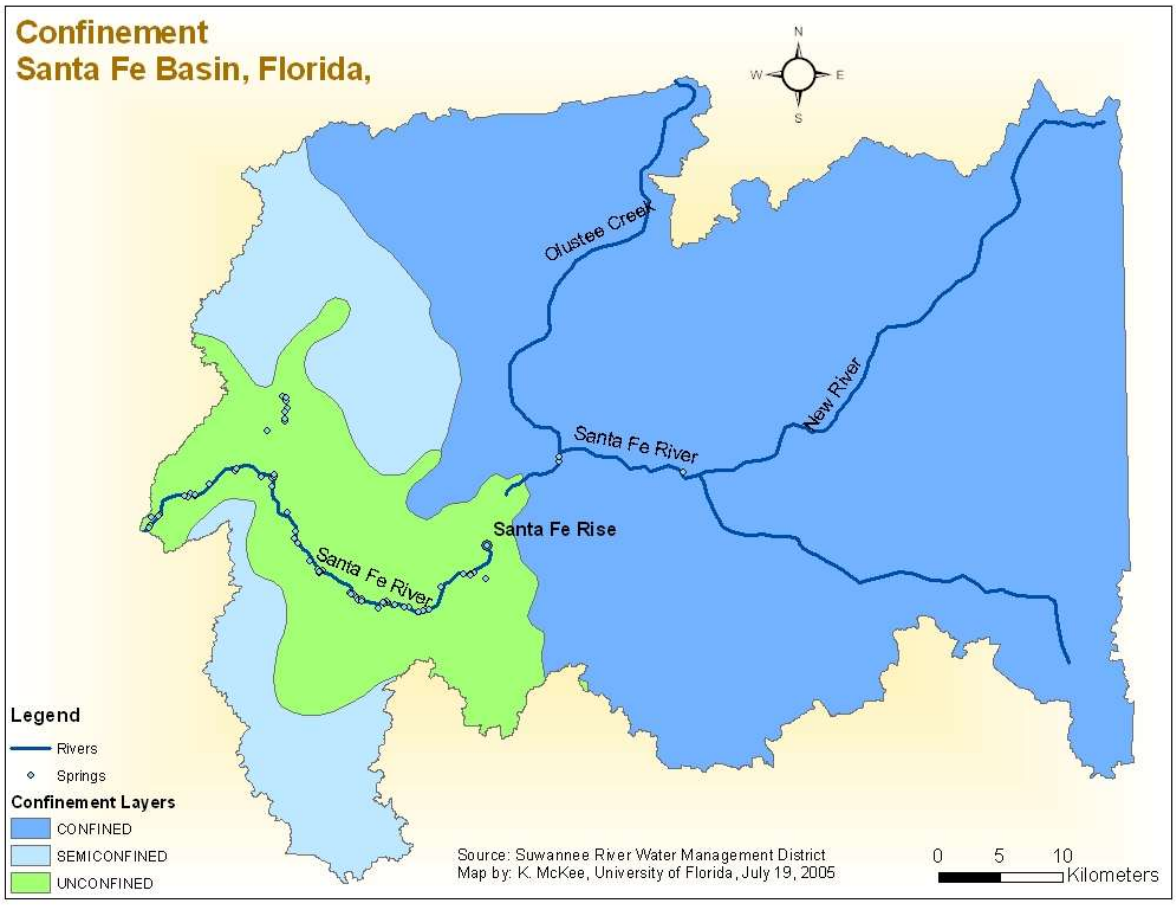

Figure 2: Confined and Unconfined Aquifers in the Santa Fe Basin

Comment 2: Outside the Springshed Loads to Rivers

The Draft NSILT Technical Support Document dated April 2025 provides some explanation for why NSILT was used to calculate loads outside of defined springshed areas. The draft document states that:

"In Santa Fe and Suwannee springsheds, the areas outside the springsheds but within the BMAP boundary are considered contributing to the rivers. These areas were evaluated in a separate NSILT analysis. The total maximum daily loads (TMDLs) for the Suwannee and Santa Fe BMAPs include numeric nutrient criteria for river water quality. Due to this requirement, a nutrient loading evaluation was performed separately to better characterize impact on outside the springshed areas and surface water quality. The NSILT was applied to support nitrogen source identification and to estimate the nutrient reductions that are needed in these areas to ensure that water quality in both rivers meets the TMDL targets."

The NSILT tool was specifically developed "to identify and quantify the major sources contributing nitrogen to **groundwater** as part of BMAPs designed to restore water-quality impaired **springs** and **spring runs**" (Katz and Eller, 2016). The use of NSILT to estimate loadings to **rivers** is not appropriate. Especially in the Upper Santa Fe basin where aquifer confinement limits recharge/discharge and hydrology is dominated by surface water flows to tributaries of the Santa Fe River.

Additionally, if the areas outside the springsheds are considered to be contributing nutrient loads to the rivers, then this should be supported by an assessment of surface water quality data from the various WBIDs along the Santa Fe River showing impaired status. The Santa Fe River in Alachua County comprises 5 FDEP WBID segments: 3605F, 3605, 3605E, 3605D, and 3605C (**Figure 3**). Of these, WBID 3605C is the only section that is not meeting water quality restoration targets of 0.35 mg/L for nitrate (monthly average). None of the upstream WBID are exceeding this target, which indicates that no load reductions are required in the upstream WBID areas to meet the target for the river.

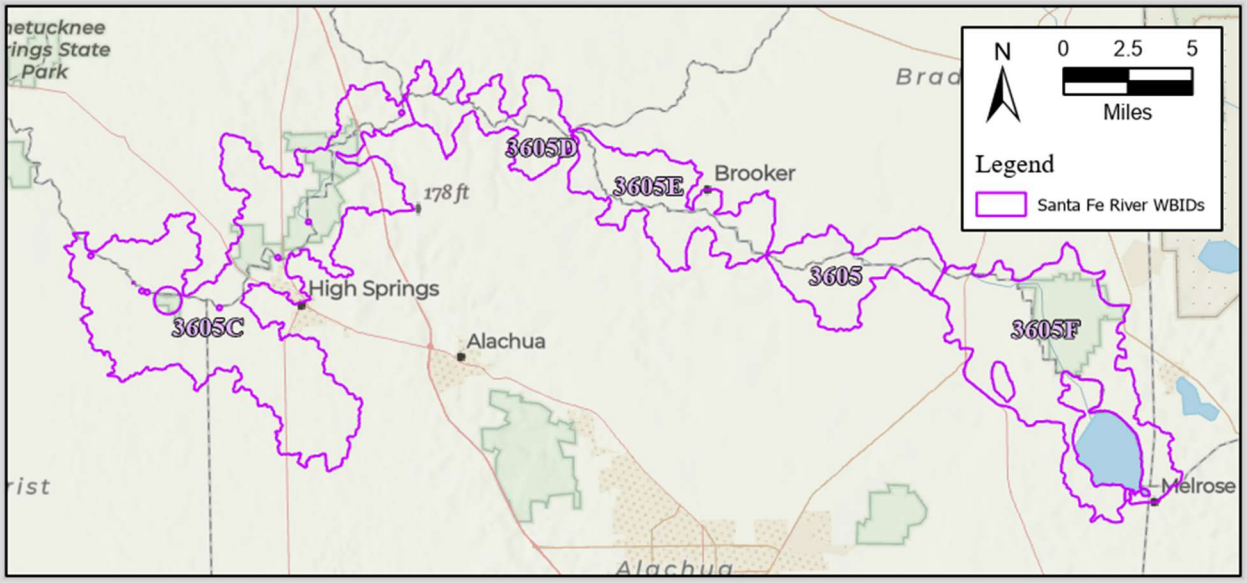

Figure 3: Santa Fe River WBIDs in Alachua County

To further support this, we evaluated average nitrate concentrations at individual monitoring stations in the 5 WBID segments outlined above. Nitrate data for all monitoring stations within the 5 WBIDs were downloaded from IWR run 65 for the period from 2012 to 2022. Average nitrate concentrations for all these stations are displayed in **Figure 4**. Sites whose average nitrate concentrations exceed 0.35 mg/L are shown in **Figure 5**. The degree of exceedance is denoted by the color scale. Note that there are no monitoring stations upstream of WBID3605C that exceed average concentrations of 0.35 mg/L. It is also noteworthy that all stations exceeding average concentrations of 0.35 mg/L are downstream of spring vents. This data indicates that the springs are the primary source of nitrate exceedances in WBID 3605C. To improve water quality at the springs, nitrogen loading should be reduced in their specific springsheds (which are the loading areas). Although some stations in the upstream WBIDs may be close to 0.35 mg/L, it is clear that the most significant sources of nitrate are found at the downstream stations.

This assessment further supports our reasoning that river load reductions are not required for areas outside the springsheds but within the BMAP boundary. If FDEP asserts that nutrient load reductions are required in these upstream areas, then they should provide supporting data which shows that these upstream WBIDs are not meeting the TMDL target. No such data has been provided in the draft BMAP. Therefore, the assumption that "areas outside the springsheds but within the BMAP boundary are considered contributing to the rivers" is unsupported and all associated load reduction calculations operating under this assumption should be removed from the BMAP until adequate supporting documentation is provided.

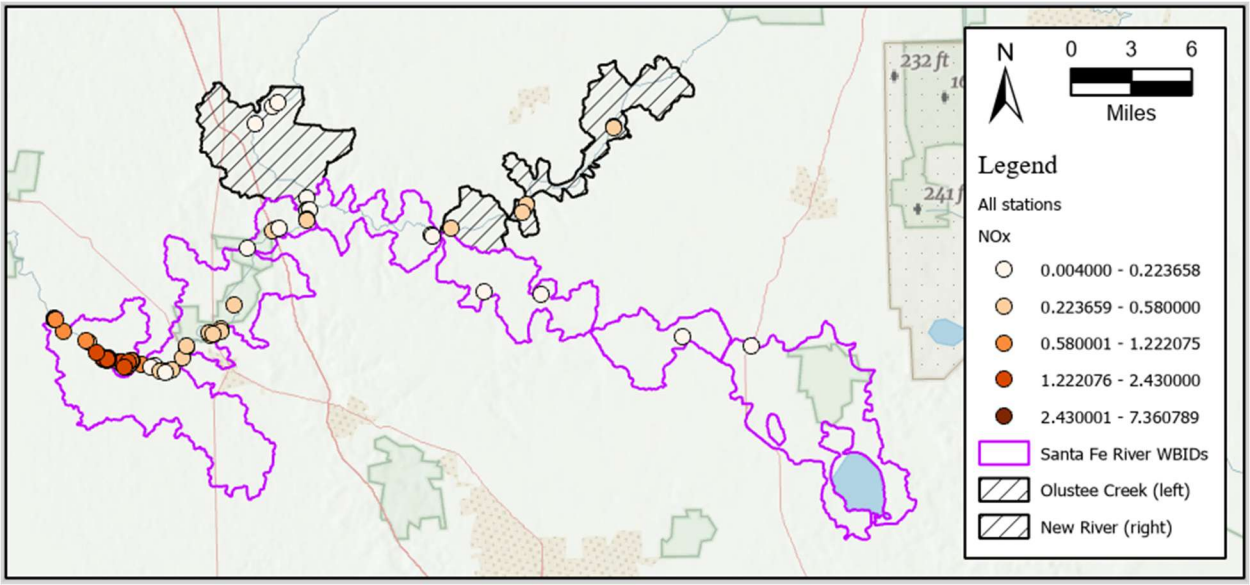

Figure 4: Average Nitrate (2012 to 2022) at Santa Fe River Monitoring Stations

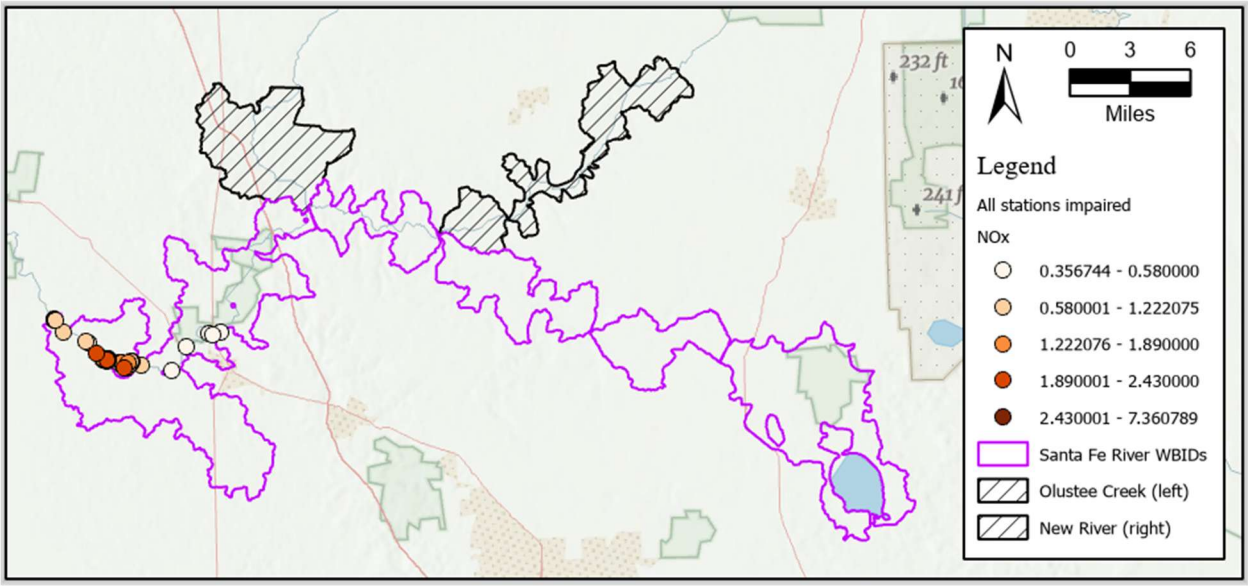

Figure 5: Monitoring stations exceeding 0.35 mg/L average for nitrate.

Comment 3: Columbia Spring

The draft BMAP states that "the Columbia springshed has yet to be delineated as of this BMAP update" and assumes that the Columbia Spring vent receives loads from all areas that are "outside the springsheds", but still within the BMAP boundary. It is additionally assumed that any reductions in loads to these areas "outside the springsheds" will result in reduced loads at the spring vent.

The County disagrees with the assumption that Columbia Spring receives significant loads from all areas that are within the BMAP boundary and "outside the springsheds". It is unreasonable to assume that all these areas contribute to loads at Columbia Spring, and no evidence is provided to support this assumption.

Columbia Spring is notably located very close to Treehouse spring, which does have a defined springshed. Given their close proximity, it seems likely that the springshed for Columbia and Treehouse springs are the same. If the springsheds are the same, then we would expect that nitrate concentrations would be similar at both springs. To assess this, a correlation analysis was performed on nitrate data for the period from 2012 to 2022, which was retrieved from IWR run 65. This included the monitoring locations shown in **Table 2** below.

Table 2: Descriptive Statistics for Nitrate (mg/L) at Treehouse and Columbia Spring

	n	Mean	Std. Error of Mean	Minimum	Maximum
21FLA G1NE0016 (TRE)	6	0.195	0.042	0.075	0.340
21FLFSI COLUMBIA SPRING (COL)	1	0.460		0.460	0.460
21FLFSI TREEHOUSE SPRING (TRE)	1	0.470		0.470	0.470
21FLSUW 127784 (TRE)	23	0.424	0.038	0.096	0.746
21FLSUW 127910 (COL)	23	0.395	0.035	0.140	0.738
21FLSUW ALA112971 (TRE)	19	0.335	0.039	0.016	0.691
21FLSUW COL010C1 (COL)	20	0.300	0.037	0.026	0.682
Treehouse Spring (all)	49	0.369	0.027	0.016	0.746
Columbia Spring (all)	44	0.353	0.026	0.026	0.738

n = number of months with data available from 2012 to 2022. TRE = Treehouse Spring. COL = Columbia Spring

Mean monthly nitrate concentration data from these monitoring locations was compiled for Treehouse Spring and Columbia Spring. A Pearson's correlation test was performed to assess if there is any relationship between the two springs. The key parameters to identify correlation are the Pearson's r value and p-value. Pearson's r measures the strength and direction of the association between two variables. The value of Pearson's r ranges from -1 to 1. A value of 1 indicates a perfect positive correlation, meaning as one variable increases, the other variable also increases. A value of -1 indicates a perfect negative correlation, meaning as one variable increases, the other decreases. A value of 0 indicates no correlation. The strength or size of the correlation varies depending upon the value. The p-value tells us the likelihood that the observed correlation is due to chance. For example, a p-value < 0.05 means that there is less than a 5% likelihood that the observed correlation is due to chance. Any p-value < 0.05 is considered statistically significant and therefore the observed correlation should be considered real.

The results of the correlation test show a very strong 1:1 correlation between the two springs, which supports the hypothesis that both springs share the same springshed (**Table 3**; **Figure 6**). Based on these results, we suggest that it would be appropriate to assign the Treehouse/Hornsby springshed to the Columbia spring. The grouping of the Columbia Spring with the Treehouse/Hornsby springshed is further supported by previous springshed delineations conducted by Upchurch (2008; **Figure 7**).

Table 3: Pearson's Correlation for Columbia and Treehouse Springs

			Pearson's r	p
Treehouse Nitrate	-	Columbia Nitrate	0.971	< .001

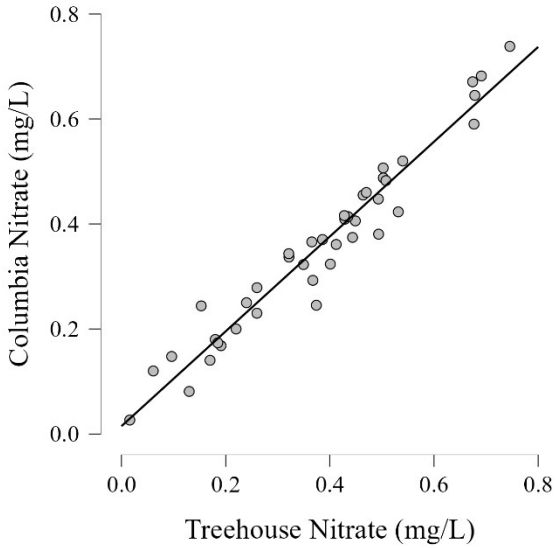

Figure 6: Correlation Plot for Columbia and Treehouse Springs

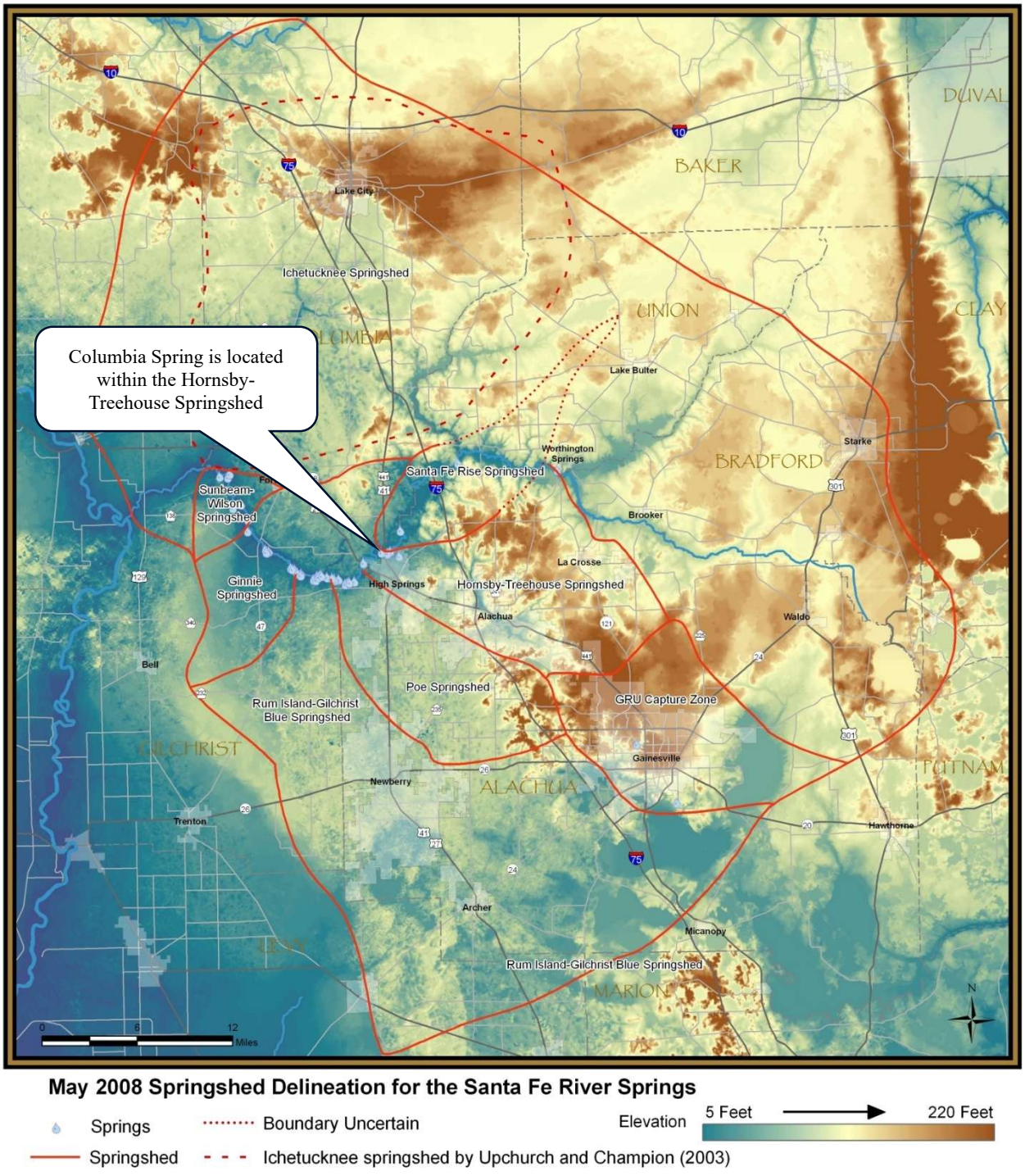

Figure 7: May 2008 Springshed Delineation for the Santa Fe River Springs (Upchurch, 2008)

Comment 4: Poe Spring

The County notes that data from Poe Springs is used to calculate required load reductions for areas outside the springsheds. There are two issues with this approach. First, Poe Springs has a delineated springshed. The Poe springshed was previously delineated by FDEP (see **Figure 8**). Any NSILT loads outside of this springshed should not be considered as contributing to loads at Poe Springs. Conversely, any loads within this springshed should not be considered as contributing to spring vent loads outside of the springshed. Second, the County notes that Poe Spring is not impaired for nitrate and therefore it does not require load reductions to meet the TMDL. Therefore, the entire Poe springshed area of about 63,000 acres should be excluded from the NSILT calculated loads to GW and associated needed load reductions. It is important to note that although load reductions may not be required in the Poe Springshed, it should still be recognized that projects completed within this springshed to reduce loads to the Santa Fe River should still receive nutrient reduction credit toward the existing TMDL as they reduce loads to the river. The County is committed to protecting Poe Springs and recently conducted an analysis of nutrient sources and is pursuing projects to reduce loading to this basin, regardless of allocations.

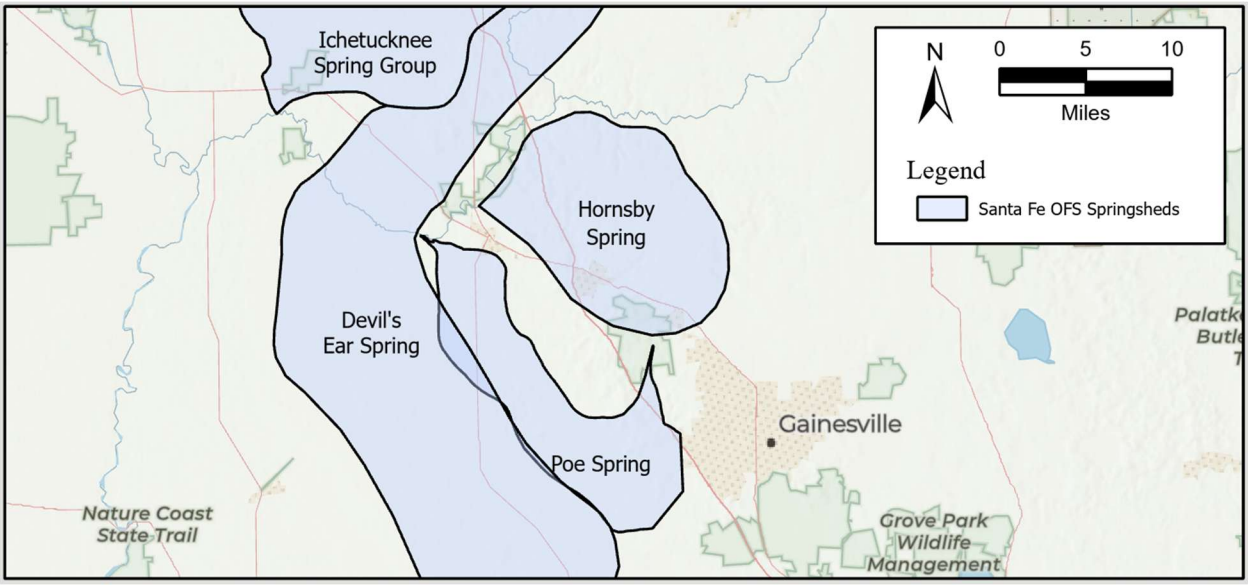

Figure 8: FDEP Poe OFS Springshed

Comment 5: Calculation of Loads and Reductions

The draft BMAP states that total loads to the springs were "estimated using the 95th percentile of nitrate concentrations and flows." However, Table 9 in the draft BMAP indicates that the "upper 95% confidence interval" was utilized in these estimates. Clarification is needed regarding the use of 95% confidence interval and/or 95th percentile. Presumably, the 95% confidence interval is in reference to the mean value, which seems appropriate for estimation of loads in the springsheds. However, using the 95th percentile is not appropriate as it would result in a significant overestimation of annual loads.

Additionally, Columbia, Poe, Santa Fe, Wilson, and other associated springs are grouped together for the purposes of calculating loads and required reductions for the "outside of springsheds" area. FDEP provided spreadsheet calculations to Alachua County by email on 5/6/2025 showing how the outside the springsheds loads were calculated. See **Table 4** and **Table 5** below:

Table 4: Current Nitrate-Nitrite Loading at Spring Vents from Areas Outside of Springsheds

Current Nitrate-Nitrite Loading at Spring Vents Outside Springsheds				
Waterbody	**NO2+NO3 (mg-N/L)**	**Discharge (cfs)**	**Loading (lb-N/yr)**	**Total Load (lb-N/yr)**
BETTY SPRINGS	8.42	2.81	46,538.08	386,236.27
SUNBEAM SPRINGS	0.27	50.91	27,059.25	
GIL729971	0.36	15.65	11,077.71	
GIL99974	0.35	7.95	5,470.85	
WILSON SPRINGS	0.56	41.3	45,282.57	
Santa Fe Spring	0.41	85.19	67,897.90	
Poe Springs	0.35	39.67	27,300.85	
Columbia Spring	0.40	199.20	155,609.06	

Table 5: Target Nitrate-Nitrite Loading at Spring Vents from Areas Outside of Springsheds

Target Nitrate-Nitrite Loading at Spring Vents Outside Springsheds				
Waterbody	**NO2+NO3 (mg-N/L)**	**Discharge (cfs)**	**Loading (lb-N/yr)**	**Total Load (lb-N/yr)**
BETTY SPRINGS	0.350	2.81	1,934.18	304,635.07
SUNBEAM SPRINGS	0.350	50.91	35,030.70	
GIL729971	0.350	15.65	10,770.00	
GIL99974	0.350	7.95	5,470.85	
WILSON SPRINGS	0.350	41.30	28,420.91	
Santa Fe Spring	0.350	85.19	58,624.00	
Poe Springs	0.350	39.67	27,300.85	
Columbia Spring	0.350	199.20	137,083.58	

Percent Reduction for the area outside the springshed is calculated as:

$$Percent\ Reduction = \frac{(Current\ Load - Target\ Load)}{Current\ Load}$$

$$Percent\ Reduction = \frac{(386{,}236.27 - 304{,}635.07)}{386{,}236.27}$$

$$Percent\ Reduction = 0.21\ or\ 21\%$$

The County has several concerns regarding these calculations. First, the grouping of Columbia, Poe, Santa Fe, Wilson, and "other associated" springs is not justified as outlined in Comment 1. This grouping for the purposes of calculating loads and required reductions appears to be based solely on the shared characteristic of these springs being geographically located outside of the FDEP delineated springshed areas. If there are any justifiable reasons why these springs should be grouped together, these should be clearly explained and documented.

Columbia spring loads should be calculated as part of, and included with, the Hornsby-Treehouse load calculations (see Comment 3).

The Poe Springshed is defined. Any NSILT loads outside of this springshed should not be considered as contributing to loads at Poe Springs. Conversely, any loads within this springshed should not be considered as contributing to spring vent loads outside of the springshed (See Comment 4).

Santa Fe Spring is the most upstream of the group. No discussion of the impaired status of Santa Fe Spring is included. A review of the IWR run 65 database shows that Santa Fe Spring is not impaired. If Santa Fe Spring is not impaired, then these loads should also not be included in the TMDL calculations. If Santa Fe is impaired, then it may be appropriate to estimate loads and required reductions within a defined springshed boundary. It is inappropriate to assume that all areas "outside the springsheds" contribute to the Santa Fe Spring without any supporting evidence. This assumption results in a significant overestimation of loads and required reductions for the basin. It is noted that while a springshed for Santa Fe Spring is not currently delineated by FDEP in the NSILT, the previous springshed delineations conducted by Upchurch (2008) include a springshed for Santa Fe Rise (**Figure 7**). This springshed contains Santa Fe Spring and loads within this springshed could be assessed in a grouped way similar to the other springsheds which contain multiple spring vents.

Wilson Spring is the most downstream of the group. It is located ~14 miles away from the most upstream Santa Fe Spring and is completely separated geographically by the Devil's Ear Springshed. See **Figure 9** below showing the location of Wilson Spring and Santa Fe Spring. It is not reasonable to group these springs together to calculate loads and required reductions for the entire area "outside the springsheds." The Wilson springshed should be defined, and percent reduction goals should be confined to its springshed area. Note that the previous study by Upchurch (2008) provides a delineation of the Wilson Springshed and it does not overlap Alachua County at all (**Figure 7**). Accordingly, it is inappropriate to ask Alachua County to address loads occurring outside its jurisdictional boundaries.

Finally, there is no discussion of the "other associated springs" from which data was utilized for calculation of loads and required reductions. Per the tables above, these other springs include Betty Springs, Sunbeam Springs, GIL729971, and GIL99974. All of these springs are located well downstream of the Alachua County boundary and there is no evidence provided that these springsheds extend into Alachua County. Therefore, we suggest that none of these loads should be included in the calculation of Alachua County's required reductions. The inclusion of Betty Spring has significant implications for the calculated loads and required reductions for the area outside the springsheds. It is noted that nitrate concentrations and loads at Betty Springs are very high, which disproportionately skews the calculations. It is also noted that flows at Betty Springs are very low, which is indicative of a small localized springshed. Given the location, low flow, and elevated nitrate concentrations at this spring vent, it seems unlikely that the Betty Springshed extends into Alachua County, yet the loads are being used to calculate required reductions for Alachua County. Alachua County's allocations should be restricted to delineated springsheds within Alachua County's boundaries whose springs are confirmed to be impaired.

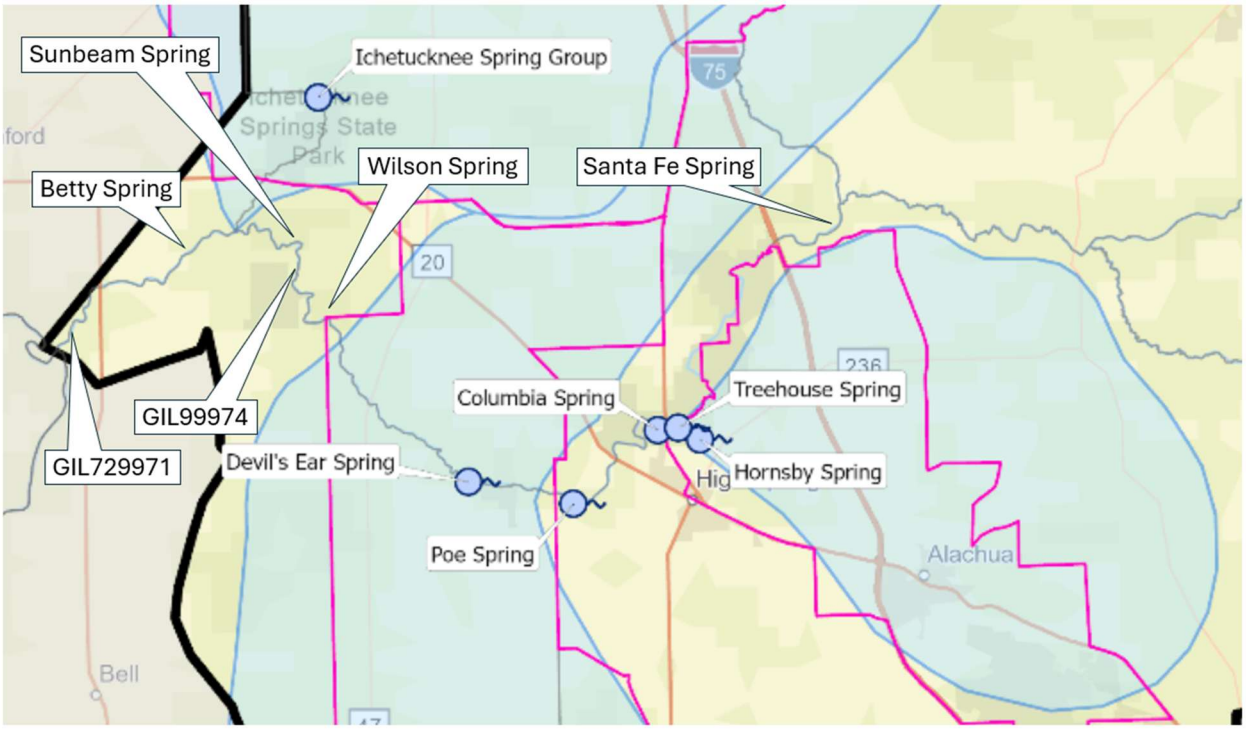

Figure 9: Spring Locations (source: Florida Springs Institute)

Comment 6: Evaluation Period for Achieving Nitrogen Reductions

The draft BMAP states that "stormwater projects completed since January 1, 2000, and OSTDS and wastewater projects completed since January 1, 2022, count toward the overall nitrogen reduction goals." This represents a departure from the previous BMAP iteration which stated that "projects completed since June 2000, count toward the overall nitrogen reduction goals". The previous BMAP did not include separate dates for inclusion of OSTDS and wastewater projects. Alachua County (with financial assistance from SRWMD) upgraded two septic systems at Poe Springs County Park in 2019, which resulted in the removal of 225 lb of nitrogen loads per year from the Santa Fe Basin. Under the proposed draft BMAP, the County would not receive any nutrient reduction credit for this project which was specifically completed in good faith to restore water quality in the Santa Fe River. Alachua County requests confirmation that these upgrades are reflected in FDEP's updated septic analysis and that the loads removed from these septic upgrades are reflected in and removed from the County's allocations.

References:

Katz, B. G., & Eller, K. (2016). The Nitrogen Source Inventory and Loading Tool (NSILT) and restoration of water-quality impaired springs. *Florida Scientist*, 299-310.

Upchurch, S. B., Chen, J., & Cain, C. R. (2008). Springsheds of the Santa Fe River Basin.