

## **Summary of Public Comments**

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Public comments in the form of eight emails with six attachments received by the Suwannee River Water Management District have been read and are summarized below.

### **1. Email from Kristine P. Morris, Florida Department of Environmental Protection, with attached comments from the Florida Springs Council (FSC).**

The major points in the attached comments from the FSC are summarized below:

a. The Florida Springs Council (FSC) has reviewed the draft minimum flows and levels basis document (MFL) for the Lower Santa Fe River, Ichetucknee River, and Priority Springs; attended the December 10th, 2019, presentation at the Suwannee River Water Management District (SRWMD); and attended the January 21st, 2020, MFL workshop in Lake City. In addition, it has reviewed the peer review document completed by Sam Upchurch on behalf of Alachua County and analysis provided by the Florida Springs Institute. Based on the above, the FSC believes that the draft MFL fails to meet the statutory requirements under 373.042, is not protective of the Santa Fe and Ichetucknee Rivers, and will result in significant harm to Outstanding Florida Springs.

b. In November of 2013, the SRWMD adopted an interim MFL for the Lower Santa Fe River, Ichetucknee River, and Priority Springs. As part of the MFL, the SRWMD found that significant harm to water resource values was occurring, requiring the development of a recovery plan. Despite the adoption of a document the District classifies as a recovery plan, approximately 2,100 new well permits have been issued within the springshed since it went into effect in 2015.

The Florida Springs Institute's analysis of USGS discharge data found a 28 percent decrease in flow from 2000 to 2017 at the US 47 gauge, when compared to pre-2000 data. These data indicate that the river systems are already experiencing significant harm from decreased flows. The continuing downward trend in flows (when adjusted for rainfall) further indicates that the recovery plan has failed to yield restoration benefits. For these reasons, the FSC challenges the draft MFL report's assertion that additional flow reductions should or can be permitted.

c. The Florida Springs and Aquifer Protection Act (FSAPA), signed into law in 2016, requires the adoption of MFLs for 30 Outstanding Florida Springs, including several within the Santa Fe River basin. However, the draft MFL only sets minimum flow levels in the rivers, not in the Outstanding Florida Springs. The FSC is concerned that the proposed MFL does not protect the individual Outstanding Florida Springs.

d. The draft MFL contends that there are insufficient data to develop MFLs for the Outstanding Florida Springs. If this is the case, DEP and the SRWMD must explain why they have failed to collect the data necessary to adopt protective MFLs for Outstanding Florida Springs, and immediately and expeditiously work to collect such data. The current MFL and recovery strategy must remain in place until such data are available.

e. The District or DEP must adopt MFLs for Outstanding Florida Springs, not just the rivers fed by those springs. However, the draft MFL fails to meet the requirement under 373.042 to adopt an MFL for each Outstanding Florida Spring and makes it impossible for the SRWMD or DEP to perform their statutory duty under 373.805 of determining “if the spring is below or is projected within 20 years to fall below the (MFL).”

f. The FSAPA anticipates that additional data will be acquired, and actions will need to be modified (373.801(4)). It does not, however, allow the SRWMD or DEP to fail to adopt MFLs for Outstanding Florida Springs because they didn’t collect the data necessary to follow the law. Also, the proposed MFL also appears to contradict the very intent of the FSAPA. Section 373.801(3)(b) states, “Many of this state’s springs are demonstrating signs of significant ecological imbalance, increased nutrient loading, and declining flow. Without effective remedial action, further declines in water quality and water quantity may occur.” Section 373.901(4) clarifies that such “action is urgently needed.” In fact, the Legislature found the need for more protective MFLs so urgent that it “authorized and found that all conditions are met, to use emergency rulemaking provisions” to adopt MFLs (373.042(2)(c)). Considering this legislation, the draft MFL’s proposal for a less protective rule and increased pumping, which will inevitably harm already diminished Outstanding Florida Springs, is negligent.

g. It appears that the draft MFL could trigger a provision in 373.805(3) which allows for the adoption of the MFL without concurrently adopting a recovery or prevention strategy. The FSC objects to the removal of an existing protection for the Outstanding Florida Springs along the Santa Fe and Ichetucknee Rivers that would allow additional pumping and result in further degradation of these Outstanding Florida Springs.

h. The draft MFL is inadequate for the above-stated reasons. Given the likelihood that the draft MFL will not go into effect for more than a year, we urge the SRWMD and DEP to withdraw this draft MFL and work with Florida Springs Council members and other subject experts to create a protective MFL for these Outstanding Florida Springs, as required by law.

**2. Email from Brittany Oliver, Gainesville Regional Utilities, with attached letter from Rick Hutton, Gainesville Regional Utilities, on behalf of the NFUCG (North Florida Utility Coordinating Group) and attached Preliminary Review Comments prepared by Liquid Solutions Group, LLC**

The letter from Mr. Hutton, written on behalf of the North Florida Utility Coordinating Group (NFUCG), indicates that a preliminary review has identified several significant issues with the draft MFLs as currently proposed. Based on these concerns, the NFUCG believes that there is not a sound technical or scientific basis to include the new 441 gage among the LSFI MFLs being considered for adoption in the current LSFI reevaluation effort. Also, several initial observations regarding the draft Ichetucknee River MFL have been identified, which are reflected in the enclosed memorandum from Liquid Solutions.

The evaluation performed by **Liquid Solutions** identified significant concerns with the analyses documented in the Draft MFL Report summarized as follows:

- a. The accuracy of the multiple linear regression (MLR) equation used to estimate historical flows for the Lower Santa Fe River (LSFR) at the US 441 gage is inadequate for use in this process, and the required statistical conditions for use of MLR are not met.
- b. Methods for estimating water resource values (WRVs) for the LSFR upstream of US 441 are mathematically-derived from work related to the Ft. White gage without adequate field work or modeling, and the mathematical method used for derivation of a WRV at the US 441 gage is not technically-based and is inappropriate for application.
- c. The North Florida Southeast Georgia (NFSEG) groundwater model is poorly calibrated at the US 441 gage leading to inaccurate impact calculations, and the NFSEG model shows anomalous impacts at springs along the LSFR which affects the calculation of historical pumping impacts.
- d. The proposed allowable change of 2.8% in flow on the Ichetucknee River (IR) is out of the typical range for spring MFLs throughout the state of Florida and requires justification. The 15% change used as a standard to prevent significant harm for WRVs is based on precedent alone and not justified by the data presented in the report.
- e. The analyses performed to date do not support the use of the US 441 gage as an MFL location for the LSFR. Neither the accuracy nor precision required for a reliable and technically-sufficient MFL can be provided at this location. Until more data are collected, protection of the LSFR should be provided by the downstream gage at Ft. White. Furthermore, as documented in further detail in its report, Liquid Solutions concludes that additional work and analyses are required in order to justify the use of the proposed IR MFLs.

### **3. Email from Robert L. Knight, Ph.D., Executive Director, Florida Springs Institute**

Dr. Knight's letter dated January 24, 2020 is summarized as follows:

The Howard T. Odum Florida Springs Institute's mission is to provide sound science and education concerning the ecological health and wise management of Florida's artesian springs and the Florida Aquifer. Please carefully consider the enclosed comments as you move forward with fulfilling your responsibility to protect our natural environmental resources.

a. It is not in the public's best interest to dry up or pollute any of Florida's artesian springs. Healthy springs support a vast and abundant assemblage of charismatic and endangered wildlife, nourish our many rivers and lakes during droughts, and are the sought-after playground for tens of millions of visitors each year.

b. Springs are essential for our local ecology and economy. Our governmental agencies responsible for protecting Florida's environmental prosperity would be reckless and irresponsible to allow our priceless springs to stop flowing or to experience rising nutrient concentrations. Nevertheless, your agency and our water management districts are complicit in the on-going decline of Florida's once crystalline springs. Not content with already permitting nearly five billion gallons of groundwater withdrawals per day from the Floridan Aquifer with the inevitable result that Florida's springs have already lost a full third of their historic average flows, our water management districts with the approval of DEP continue to issue thousands of new well permits each year.

c. The simple truth is that every gallon of groundwater that is pumped to the land surface and not returned to the aquifer is one less gallon contributing to spring flow. During dry years with less rain to recharge the aquifer and greater pumping for irrigation, many springs stop flowing entirely and reverse flows, allowing tannic surface waters to enter the underground caves and conduits of the Floridan Aquifer. The springs that feed the Santa Fe River are not immune to this fate. In 2012 several first and second magnitude springs on the Upper and Lower Santa Fe River stopped flowing. These included Worthington Spring, Santa Fe Spring, River Rise, Treehouse Spring, Columbia Spring, Hornsby Spring, Poe Spring, and others.

d. It is also a documented fact that the springs along the Santa Fe River are discharging an annual load of anthropogenic nitrate-nitrogen between 1,000 and 2,000 tons to the Santa Fe River, and ultimately to the Suwannee River and Gulf of Mexico. Your own data published in the 2013 MFL report documented that there is a clear and significant inverse relationship between river flow and nitrate concentrations. To state the obvious, lowered flows exacerbate nutrient pollution in the rivers.

e. Groundwater quantity and quality must be considered together as a holistic system to solve these worsening problems.

f. In 2012 DEP adopted a basin-wide water quality action plan for the Santa Fe and Ichetucknee rivers. That plan required a 50 percent reduction in nitrogen fertilizer loading for the 1,800 square mile Santa Fe Springshed that feeds groundwater to more than fifty springs that flow into these rivers.

g. In 2014 the Suwannee and St. Johns Water Management Districts completed a multi-year study of the Santa Fe and Ichetucknee rivers and concluded that both waterways were beyond the point of significant harm due to excessive groundwater pumping.

- h. In 2015 the Florida Department of Environmental Protection in association with the Districts, implemented a prevention and recovery strategy to comply with the Santa Fe and Ichetucknee minimum flow requirements.
- i. In 2018 DEP revised the Santa Fe Basin Management Action Plan in the face of the 2012 plan utterly failing to reverse continuing water quality degradation. And now, at the end of 2019 and early 2020 the DEP and the Districts are back, revising their failed 2015 MFLs.
- j. In the Santa Fe Springshed 2,100 new well permits were issued since 2015 when the Districts and DEP assured the public that we had entered a “prevention and recovery” period for these water bodies. Every well permit that allows more groundwater to be withdrawn from the aquifer also facilitates the application of more fertilizer to ag fields or lawns. The resulting depletion and pollution of our region’s groundwater is a double blow to the health of our drinking water and local springs.
- k. Analysis of the actual USGS discharge data for the MFL stations was summarized and reported to District staff in August 2018 (see attached). Median flows in the Santa Fe River at the US 47 Gauge are down 28 percent for the period 2000 to 2017 compared to flows recorded at that location before 2000. Median flows averaged over the past two decades are only about 800 cfs compared to the District’s recommended MFL median flow of 1,167 cfs. The new MFL and the old MFL are not being achieved.
- l. The fact that the District’s draft MFL authorizes a flow reduction of 114 cfs (74 MGD) while actual, multi-decadal flows are already 509 cfs (329 MGD) lower than historic flows, proves that this new MFL is already violated and not in the public’s legitimate best interests. FSI recommends that this new MFL mandate the recovery of 395 cfs (255 MGD) (the difference between 509 and 114 cfs) of lost flows by substantially reducing all existing water use permits in the region.
- m. Large springs that were never observed to stop flowing in the past, have stopped flowing multiple times during recent drought periods. Springs that were translucent-blue 25 years ago are now green-brown and most of their plants and fish are gone. Rivers and springs that were pristine as recently as 40 to 50 years ago are now terribly polluted and depleted as a result of poorly regulated human activities. The science is clear – the aesthetic and economic health of our local rivers and springs is being lost as groundwater withdrawals and fertilizer inputs increase, one gallon and one pound at a time. The springs that provide the base flow of the Santa Fe and Ichetucknee Rivers are suffering a “death by a thousand cuts”.
- n. For the health and vitality of our region’s priceless springs, we recommend that no new wells be permitted, and no expired permits be re-issued until a greater volume of existing groundwater use is eliminated from those existing permits.
- o. We respectfully request that DEP use its authority to expeditiously restore the Santa Fe and Ichetucknee Rivers and Springs.

An attachment, “Spring Flow Declines in North Florida” dated August 23, 2018, is included with Dr. Knight’s letter.

#### **4. Email from Steve Gladin**

Mr. Gladin points out that the SRWMD has not set minimum flows and levels, only minimum flows. He suggests that the protective value for submerged aquatic vegetation (SAV) should be expressed as a function of flow and stage. Also, he suggests that required minimum flows and levels should be evaluated in terms of recent history in which conditions in the Lower Santa Fe River have declined.

#### **5. Email from Sharon Yeago**

Ms. Yeago comments that the MFL process is flawed, and encourages allowing staff to provide recommendations regardless of funding limitations to find common ground with critics of this process.

#### **6. Email from Kristi Gregory with an attachment from John D. Jopling, President, Ichetucknee Alliance, Inc.**

The comments from Mr. Jopling are summarized as follows:

- a. The [draft MFL] document fails to meet legal requirements, is not protective of the Ichetucknee River, and will result in significant harm to the Ichetucknee River’s Outstanding Florida Springs.
- b. The document’s MFL proposal is negligent in that the draft MFL’s proposal for a less protective rule enables increased pumping, which will inevitably harm already diminished Outstanding Florida Springs.
- c. The draft MFL document could remove an existing protection for the Outstanding Florida Springs along the Ichetucknee River that would allow additional pumping and result in further degradation of these springs.
- d. The draft MFL document contains a false statement on page 57 in regard to Water Resource Value (WRV) 5, Maintenance of Freshwater Storage.
- e. The draft MFL document relies on insufficient data and ignores the Precautionary Principle, i.e., when in doubt, choose the course of action that causes the least amount of environmental harm until doubt can be resolved.
- f. The draft MFL document relies on outdated information and ignores the Precautionary Principle, i.e., when in doubt, choose the course of action that causes the least amount of environmental harm until doubt can be resolved.

g. The document ignores damage to an aesthetic and scenic attribute in regard to WRV 6, Aesthetic and Scenic Attributes (pdf page 65).

h. The groundwater model used in development of the MFL is flawed regarding its use in areas of karst environments such as those that surround the Ichetucknee River.

i. The MFL document fails to consider the connections between flow (water quantity) and water quality.

In conclusion, it is asserted that the draft MFL technical document does not ensure that the right things will be done to ensure restoration, preservation, and protection of the Ichetucknee River and its associated springs.

## **7. Email from Jim Tatum**

Mr. Tatum requests that the minimum river levels should be raised, not lowered, and that the District should work on how much and how fast the river can be restored.

## **8. Email from Stacie Greco, Alachua County Environmental Protection Department, with attached letter from Chris Bird, Environmental Protection Director, Alachua County Environmental Protection Department, and a peer review from Sam B. Upchurch, Ph.D., P.G.**

In his letter, Mr. Bird echoes the concerns expressed in Dr. Upchurch's report and itemizes several concerns. Limitations in the water-use data set that do not reflect possible trends from commercial and residential public water supply to other water sources such as irrigation wells are noted, and the lack of climate change modeling and planning is of concern. County staff question the assumption that a 15% harm or reduction to the Water Resource Values is an acceptable threshold for adequately protecting the resources and are concerned that there is no mention of a Recovery Plan that outlines measures to decrease groundwater pumping via regulatory and educational methods.

The report prepared by Dr. Upchurch is a peer review of the proposed Minimum Flows and Levels (MFLs) for the Lower Santa Fe River (LSFR), Ichetucknee River (IR), and priority springs (PS) performed for the Alachua County government. A summary of the conclusions concerning (1) the ability of the proposed MFLs to protect these water bodies from "significant harm" as directed in Chapter (§) 373 Florida Statutes and (2) the utility of the MFLs for water-resource management is as follows:

a. The MFL basis report, dated December 2019 and prepared by HSW Engineering, Inc., deals with the appropriate issues for MFL development. The report develops the basis for revising MFLs

set in 2013. The 2013 MFL basis document concluded that water had been over-committed and concluded that significant harm had occurred to the rivers. As a result, a Recovery Strategy was required. Part of the Recovery Strategy included development of a new, regional groundwater flow model to replace the one used in 2013.

b. Chapter 373 F.S. requires that “best available data” be used in development of the MFLs. The basis report includes the best available data for the LSFR and IR, but not for the PS. Use and manipulation of these data are a subject of this peer review, however.

c. A new monitoring gage and an associated MFL was established at the US 441 bridge over the Santa Fe. In addition, the LSFR, which was previously defined as beginning at the River Rise, was redefined to begin at the Worthington Springs gage, which is upstream from the River Sink at O’Leno State Park. This was an excellent decision as it directly ties the LSFE MFLs to those previously adopted for the Upper Santa Fe. In effect, the MFLs set for the Upper Santa Fe at Worthington Springs are incorporated into the LSFR MFLs.

d. The HEC-RAS modeling used to characterize river flows and interactions with river channels and floodplains is excellent for the most part.

e. The report incorporates several new approaches to MFL development. These include use of the new groundwater flow model (the North Florida and Southeast Georgia [NFSEG] model); use of the System for Environmental Flow Analysis (SEFA), a method for relating riverine flows to such issues as fish passage; and reliance on a Reference Time Frame (RTF) hydrograph, which was used to propose theoretical hydrographs for the rivers assuming that no groundwater withdrawals were present.

f. As a result of use of these new approaches, the basis document concluded that significant harm has not occurred in the rivers and that water is available for additional use. These conclusions are in contrast to the 2013 MFL even though the 2019 and 2013 MFL critical flows are similar for the IR and the critical flow for the LSFE at the Ft. White gage is lower in the 2019 MFL than in the 2013 MFL.

g. A review of the basis document indicates that the proposed MFLs are not adequately supported by the relevant scientific and technical literature and that large uncertainties in the RTF data, including historical pumping data used in development of the NFSEG model, and thresholds used to evaluate Water Resource Values (WRVs) specified in §373 F.S. with SEFA are not well explained or defended.

h. Several of the socio-politically sensitive WRVs, including recreation and aesthetics are not well developed. These WRVs are often neglected because (1) they are hard to quantify and (2) it is assumed that the other WRVs, which are quantifiable, protect these WRVs. Given the issues that currently are important to stakeholders and often dominate the press, these WRVs should be better evaluated and the opinions of the authors defended.

- i. Priority springs were thought to be protected from harm by the river MFLs. It is Dr. Upchurch's professional opinion that this is not the case and that the springs are not adequately protected.
- j. The basis document fails to provide sufficient detail to evaluate conclusions contained in the report. The report is poorly referenced and fails to adequately explain karst processes in the study area.
- k. The RTF hydrograph was used as a baseline for establishing MFLs. There is no discussion of the reliability of historic pumping data, a critical step in the MFL process. This is a serious shortcoming because errors and uncertainties in estimating the RTF river flows cascade through the entire MFL processes. The peer review enumerates many of the uncertainties associated with the MFL methods. Uncertainties are cumulative, so by the time an MFL is proposed, there may be consequential possible error.
- l. The SEFA approach is not well defended and many of the critical thresholds used to determine adequate flow conditions for a WRV are based on personal communications and other "soft" sources. There is no adequate validation of the SEFA method, especially in comparison with the PHABSIM methodology, which was utilized in the 2013 MFL basis document and led to the conclusion that water resources had been over committed.
- m. Transfer of important, flow-related thresholds from one gage to another by ratio-and proportion methods needs substantial improvement in terms of justification and precedent.
- n. There is a historic precedent used amongst the water management districts that a 15 percent reduction of flow from baseline conditions represents significant harm. This assumption was used for the 2019 MFLs and needs to be justified with appropriate literature citations.
- o. The MFLs for the rivers consist of one flow value and recurrence interval, namely the median flow that protects all WRVs. This conservative approach assumes that the shape of the flow-duration curve does not change from the RTF, which is problematic, to the MFL-defined curve. If rigorously followed, there will be no ability to allocate water during high flows or from base flow (flow from springs). It is my opinion that (1) this MFL structure limits water management options and (2) will be difficult to follow. It does, however, make interfacing with a steady-state groundwater flow model simple.