GUNSTER
FLORIDA'S LAW FIRM FOR BUSINESS

(850) 521-1980
gmunson@gunster.com

October 31, 2024

Via Electronic Transmission: OWP_rulemaking@floridadep.gov
Florida Department of Environmental Protection
Division of Ecosystem Restoration
3900 Commonwealth Boulevard, M.S. 49
Tallahassee, FL 32399

Re: Lower Santa Fe and Ichitucknee Rivers MFL Draft Regulatory Strategy

Dear Office of Water Policy,

On behalf of WestRock CP, LLC ("WestRock"), please accept these comments regarding the draft regulatory strategy for the Lower Sante Fe and Ichetucknee Rivers pursuant to Chapter 62-42.300, Fla. Admin. Code.

WestRock employs approximately 1,500 employees across thirteen facilities throughout Florida, including the Jacksonville and Fernandina Beach Mills. WestRock generates over $9M in tax revenue for Florida, and spends almost $300M on suppliers, much of which benefits the Florida economy. WestRock has a global sustainability initiative, including water stewardship as demonstrated by the Fernandina Beach Mill's project to shift the source of its withdrawal from the Upper Floridan aquifer to the Lower Floridan aquifer to assist in managing water supply in the region.

Despite the emphasis placed on water stewardship by WestRock, it is not immune from market pressures and carefully monitors regulatory activity in Florida to ensure it can remain competitive in the international marketplace. WestRock has been particularly attentive and engaged in rulemaking associated with regional MFLs and groundwater modeling. Through an industry association and directly since at least 2018, WestRock participated in development of the North Florida Southeast Georgia Regional Groundwater model (NFSEG) and MFLs for the Santa Fe and Ichitucknee Rivers.

The Department's draft regulatory strategy requiring offsets for withdrawal impacts as small as 0.01 cubic feet per second (cfs) on the MFL waters would impose a regulatory burden without any noticeable environmental benefit, as demonstrated by the attached analysis. The HDR analysis raises several important concerns about the Department's proposed strategy:

First, the NFSEG model is not sufficiently accurate to determine a 0.01 cfs impact.
Second, the NFSEG model treats WestRock's Mills, located approximately 70 and 90 miles from the MFL waters, the same as withdrawals immediately adjacent to the MFL waters.
Third, the NFSEG model is steady state, and ignores beneficial, natural changes that may occur over time.
Fourth, regarding the Jacksonville Mill, the NFSEG ignores recent, local reductions in water use.
Fifth, regarding the Fernandina Beach Mill wells, the NFSEG surrounds these with sensitive constant head and drain boundary cells which if simulated slightly differently

could cause significant changes to the outcome when using a 0.01 cfs threshold.
Sixth, regarding the Fernandina Beach Mill, NFSEG ignores that one of the Mill's wells withdraws from the Lower Floridan aquifer and thereby overestimates withdrawals from the Upper Floridan aquifer.
Seventh, regarding the Fernandina Beach Mill, NFSEG does not identify the specific wells being simulated, making it difficult to confirm an accurate simulation.

As applied to the WestRock Mills, these flaws make the draft regulatory strategy impact trigger level of 0.01 cfs arbitrary. WestRock would welcome the opportunity to discuss potential strategies for resolving these concerns, including raising the trigger impact level above 0.01 cfs or recognizing that WestRock's Mills have presented a basis for being below the 0.01 cfs trigger level.

WestRock appreciates your consideration of these comments. If you have any questions regarding this request, please contact me at (850) 521-1713, or at gmunson@gunster.com.

Sincerely,

Gregory M. Munson

cc: Adam Blalock – FDEP, Deputy Secretary for Ecosystem Restoration
Mike Register – SJRWMD, Executive Director
Mary Ellen Winkler – SJRWMD, Assistant Executive Director
Clay Coarsey – SJRWMD, Division of Water Supply Planning, Director
John Fitzgerald – SJRWMD, Division of Water Supply Planning, Bureau Chief
Hugh Thomas – SRWMD, Executive Director
Sean King – SRWMD, MFL Office Chief
Nina Butler – Smurfit WestRock, Chief Environmental Officer
Michele Rundlett – Smurfit WestRock, Environmental Manager

Memo

Date:	Thursday, October 31, 2024
Project:	MFL Assessment using NFSEG
To:	WestRock CP, LLC
From:	Shane McDonald and Jillian Troyer, HDR
Subject:	Evaluation of MFLs and comments regarding proposed changes to the LSFIR MFL

St. Johns River Water Management District (SJRWMD) and Suwannee River Water Management District (SRWMD) created a regional transient groundwater model, the North Florida Southeast Georgia Regional Groundwater Model (NFSEG). SJRWMD is using NFSEG as the basis for identifying water withdrawals that potentially impact Minimum Flows and Levels (MFLs) of sensitive surface water bodies. The identified withdrawals would be subject to regulatory action and the requirement to submit an impact offset plan. Recent proposed revisions to the MFL rule reduce the identifying impact by an order of magnitude from 0.1 cubic feet per second (cfs) to 0.01 cfs.

HDR brought NFSEG into the pre- and post-processing software Groundwater Modeling System (GMS) using the command prompt MODFLOW NWT version files provided by the SJRWMD. There are two stress periods simulated in the model: steady state through 2001 and transient conditions through 2009 (however, storage is not simulated in the model so the second stress period is also steady state). The SJRWMD is using NFSEG to evaluate withdrawals based on the proposed MFL rule.

Smurfit Westrock has concerns about the proposed rule and how NFSEG will be used to identify groundwater users that exceed regulated impacts to the MFLs. HDR has developed the following comments based on our review of NFSEG and various simulations that were conducted.

General Comments:

Comment 1: Accuracy of the NFSEG model is less than the required 0.01 cfs rule. Appendix F of the NFSEG modeling report identifies an average baseflow residual (difference between modeled and observed) of 79.8 cfs for 2001 and 135.4 cfs for 2009 (Durden 2019). These residuals of NFSEG's ability to reproduce the target MFL flows are three and four orders of magnitude larger than the proposed 0.01 cfs threshold. This means that the model is unable to assess streamflow differences at an accuracy of 0.01 cfs because that level of precision is outside of the model's calibration limits. Table 1 breaks down the baseflow NFSEG modeling results for both the 2001 and 2009 timesteps.

Table 1. Statistics of the baseflow NFSEG modeling results from Appendix F of the NFSEG v1.1 modeling report (Durden 2019).

Baseflow NFSEG Modeling Results		
Statistics	**2001**	**2009**
Max Residual	747.7	598.7
Min Residual	0.01	0.02
Average Residual	79.8	135.4
Max Weighted Residual	31.4	28.2
Min Weighted Residual	0.01	0.01
Average Weighted Residual	7.0	7.3
*all in cfs		

Comment 2: The proposed MFL rule assigns the same requirements to all modeled facilities regardless of the distance to the measured MFL. The farther away from the target MFLs, the greater the effect of the modeling error and uncertainty in the model. For example, small and seemingly insignificant differences in parameters such as recharge and river conductance could result in an important effect over a large distance. In other words, the farther a facility is from the measured MFL, the greater the uncertainty in the modeling results. The Jacksonville Mill is 365,250 feet (69 miles) and Fernandina Beach Mill is 480,000 feet (90 miles) from the three target MFLs, so the effect of any errors in the model would be greater on the Jacksonville and Fernandina Beach Mills than facilities closer to the MFLs since the errors get compounded by distance. Given the NFSEG simulated baseflow for the two timesteps have average residuals of 79.8 cfs and 135.4 cfs, the distance between the MFL and facilities must be considered.

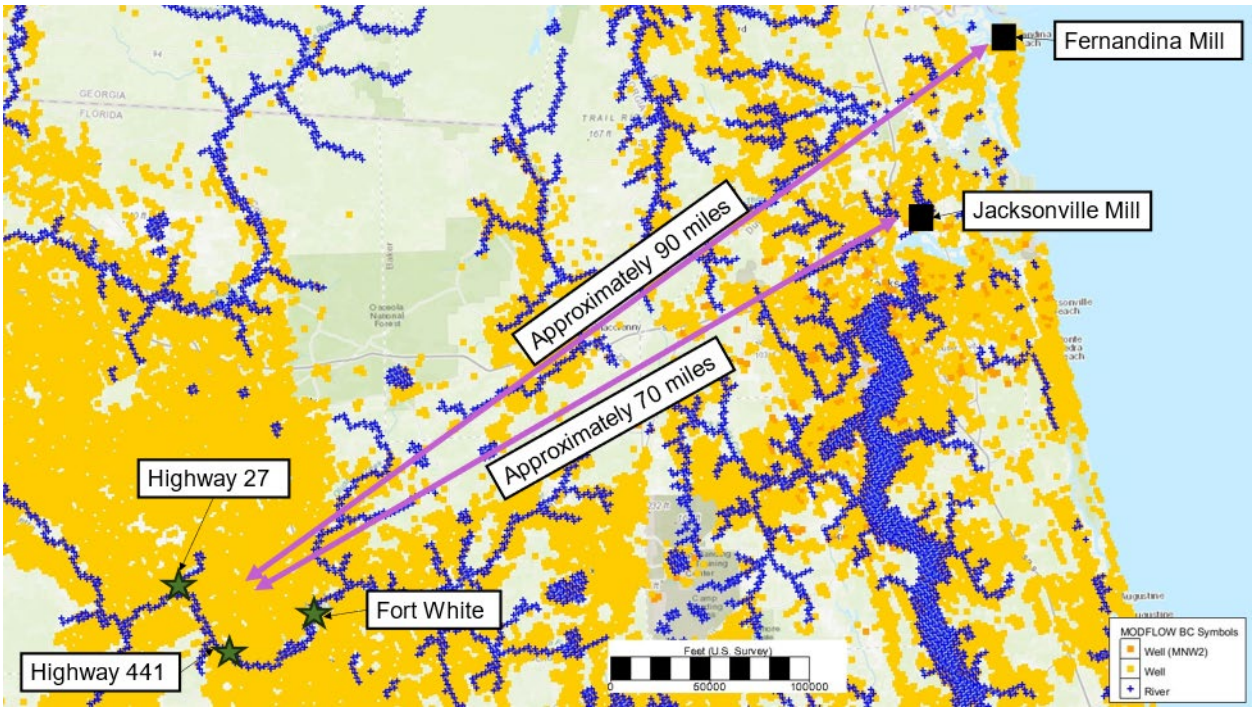

Figure 1. NFSEG model showing the location of the MFLs (green stars), Jacksonville and Fernandina Beach Mills (black squares), simulated rivers, streams, and springs (blue x), and simulated wells (orange squares). The purple lines shows the distance between the proposed MFLs and the Jacksonville and Fernandina Beach Mill.

Comment 3: The NFSEG model does not contain a storage coefficient, meaning it simulates two steady state conditions and not transient progressions through time. The distance between the Jacksonville and Fernandina Beach Mills and the MFLs is great enough that it could take decades for the effects of pumping from these mills to arrive at the target MFLs for the Lower Santa Fe Inchetuncknee River (LSFIR). Since the NFSEG model is steady state, the impact of pumping occurs instantaneously and not over a period of simulated years. This means that the model does not accurately portray the pumping that is affecting the MFLs, and pumping occurring farther away has the same temporal effect as pumping from facilities that are closer. Any measured impacts on the MFLs are likely the result of more local withdrawals, and the NFSEG cannot be used in its current state to discern the difference between local and remote withdrawals.

Comment 4: For the Jacksonville Mill, there are some years where the operations of Florida Power & Light Company's (FPL) Cedar Bay Generating Plant were being included. Additionally, the mill has reduced its usage over time and this reduction is not accounted for in the NFSEG.. All NFSEG modeling runs used for purposes of evaluating potential impacts on the LSFIR should be performed using the most current, available water withdrawal data.

Comment 5: The Fernandina Beach mill is located on Fernandina Beach, right next to the Atlantic Ocean. It is east of the mouth of the Amelia River and just south of Egans Creek. The NFSEG model simulates the Atlantic Ocean, Amelia River and Egans Creek as a constant head boundary. In a constant head boundary, the head does not change. The water flows in and out

of the groundwater model at a flux sufficient for keeping the head constant. Figure 2 shows the location of Fernandina Beach mill and its wells in comparison to all of the boundary conditions surrounding it. This figure shows all layers and all boundary conditions in each layer in each cell. As can be seen in Figure 2 the wells associated with Fernandina Beach mill are adjacent to, and in some cases in the same cell as, constant heads and drain cells. These boundary conditions control the effect of the simulated pumping in the model. Any changes to these boundary conditions, for instance, a decrease of conductance value in the drain cells or a slight increase by even a factor of .0001 ft in the assigned constant head cells elevation, could change the simulated drawdown cone of depression and simulated change of flow in simulated surface water bodies significantly. The 0.01 ft^3/s MFL rule is using the model in a way that is outside of the models ability to accurately determine the effect of pumping occurring at Fernandina Beach mill on the LFSIR MFLs.

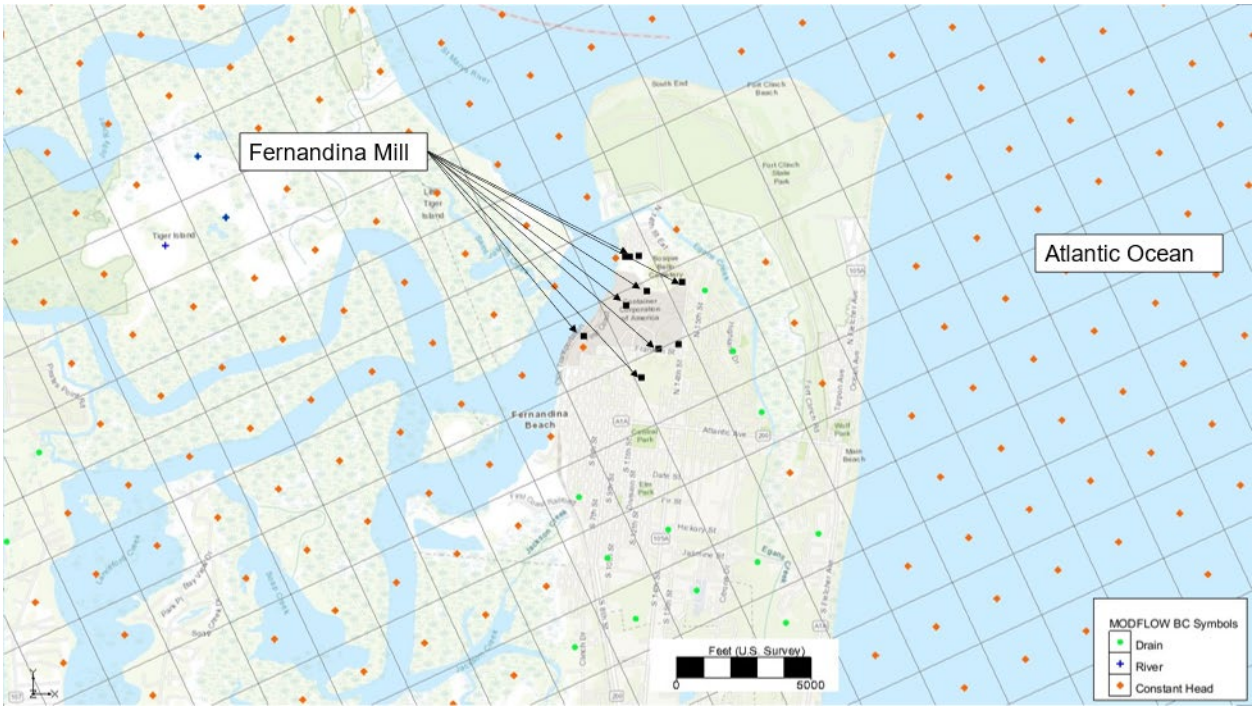

Figure 2. Location of Fernandina Beach Mill wells in relation to boundary conditions representing the Atlantic Ocean (red diamonds for constant heads), blue crosses for river boundary and green squares for drains.

Comment 6: As of February 2023, the Fernandina Beach mill has one of its wells pumping from the lower Floridan Aquifer which is not represented in the NFSEG model. Currently the simulated pumping at Fernandina Beach mill is only in the Upper Floridan and does not account for a portion of that pumping to be coming from the Lower Floridan. This well was placed there to offset some of the effects of pumping by utilizing higher TDS water. This means that the model is over simulating pumping in the Upper Floridan Aquifer.

Comment 7: There is approximately 33 MGD of pumping being simulated in the Upper Floridan Aquifer in Fernandina Beach near the Fernandina Beach mill, and there are several different water withdrawals within this area. The wells in this area have no well ID or identifying nomenclature to decern which well is being simulated for which water user. This makes it

difficult to determine which wells are specifically identified as representing Fernandina Beach mill wells and to verify that the amount of pumping is accurately simulated for the new MFL rule assessment.

Summary

All models are tools. These tools can be valuable and informative, but it is important to use the tools within the bounds of their capabilities and accuracy. The NFSEG model is a well built and useful model but like all models it has its limitations. Since the model is regional and its cells are one mile x one mile, it is unable to capture smaller localized changes. While well calibrated, our evaluation indicates that this model is unable to give useful information down to an accuracy of 0.01 cfs. For example, a slight change in recharge by 0.01 percent or a slight increase or decrease in the constant head elevations or river package/drain conductance values could change the result of the modeling results by 0.01 cfs at the MFLs.

All these slight changes are reasonable within the bound of the calibration but could make enough difference to bring a potential user out of compliance. NFSEG is a well-built regional model that is useful in capturing the regional hydrodynamics of northern Florida and southeast Georgia but is unable of capturing the groundwater and surface water changes down to a precision outside the accuracy of its calibration statistics, which is being proposed as the threshold for the LSFIR MFLs. We have strong concerns about this level of precision being applied for the MFLs and ask the SRWMD to reconsider this threshold.

References:

Flores, Pamela. 2024. Lower Santa Fe and Ichetucknee Rivers Minimum Flows and Levels Rule Development Workshop Draft Regulatory Strategy. Office of Water Policy and Ecosystems Restoration Florida Department of Environmental Protection. July 31, 2024.

Durden, Douglas; Gordu, Fatih; Hearn, Douglas; Cera, Tim; Desmarais, Tim; Meridth, Lanie; Angel, Adam; Leahy, Christopher; Oseguera, Joanna; St. Johns River Water Management District; Grubbs, Trey; and Suwannee River Water Management District. 2019. North Florida Southeast Georgia Groundwater Model (NFSEG v1.1). St. Johns River Water Management District, Palatka, Florida. 2019.