



October 24, 2014

To: Arkansas Natural Resources Commission
Attn: Mr. Ed Swaim
Water Resources Division Manager
101 East Capitol Avenue, Suite 350
Little Rock, Arkansas 72201

From: Arkansas Farm Bureau Federation
Mr. Evan A. Teague, P.E. *EAT*
Director, Environmental & Regulatory Affairs
P.O. Box 31
Little Rock, AR 72203

Re: State Water Plan Executive Summary and Related Documents

Mr. Swaim:

The Arkansas Farm Bureau Federation is a 501(c)(3) agriculture advocacy organization representing nearly 200,000 member families across Arkansas. We support the Arkansas Natural Resources Commission's (Commission) effort to update the Arkansas Water Plan (AWP) and commend the Commission for providing a process that allowed for stakeholder participation. After almost 2-years of monitoring and participating in the AWP update, we appreciate the opportunity to submit the following comments.

The Process

Overall the process was fair, open and transparent and provided adequate opportunity for stakeholder participation; however, the amount of influence that Arkansas Game & Fish Commission (AGFC) staff appeared to have in the process and the actions of some members of the Fish & Wildlife and Recreation (FWR) stakeholders were concerning.

The AGFC provided substantial funding to make possible the update of the Arkansas Water Plan. This alone is not necessarily concerning; however, during the Demand & Forecasting, the Supply Availability and especially the Issues & Recommendation Workgroup meetings representatives of the AGFC served as the designated spokespersons of the FWR stakeholders. It was a direct conflict of interest for the AGFC to have provided funding to make the water plan update process possible and to then have its employees serve as spokespersons during the stakeholder workgroup meetings. It would have been the same as employees of the Arkansas Natural Resources

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Commission (ANRC) participating as stakeholders and serving as spokespersons for one of the stakeholder groups. To be clear, ANRC staff was present at the stakeholder workgroup meetings, but unlike AGFC staff, they conducted themselves appropriately by serving as observers only. It is also worth noting that AGFC staff was leading the FWR Stakeholder efforts which was also a conflict of interest.

Early in the process during a Demand & Forecasting Workgroup meeting of the Agriculture Stakeholders an AGFC representative interjected themselves into a discussion regarding crop irrigation and demand projections in the Eastern Arkansas Planning Region. A statement was made (paraphrasing) that farmers need to understand that aquifer levels are declining and the current usage is unsustainable as if agriculture stakeholders weren't aware of declining aquifer levels and insinuating that farmers were doing little to address the issue. The Agriculture Stakeholders viewed this statement as arrogant, insulting and demonstrated little understanding of and appreciation for the conservation efforts being implemented by farmers in the East Arkansas Planning Region.

A complaint was made to the contractor that if AGFC representatives were going to be allowed to attend and provide input into meetings of Agriculture Stakeholders that the same courtesy should be extended to allow other stakeholders to monitor FWR Stakeholder meetings. At that time members representing the other stakeholder groups were not allowed or at least were not being informed of FWR Stakeholder meetings.

Later in the process and during the Issues & Recommendations Workgroup meeting stakeholders were provided with dots and asked to place them next to the issues they believed to be most important. Fair enough. However, it quickly became apparent that the FWR Stakeholders viewed this process as more of a game than a serious consideration of the issues. Their strategy was to wait until the other stakeholders had nearly completed placing all their dots and to then place their dots on their issues with little consideration of the issues raised by other stakeholders. These actions combined with the fact that AGFC representatives were leading the FWR Stakeholder efforts caused many stakeholders to question the integrity of the process.

During subsequent Issues & Recommendations Workgroup meetings the contractors changed the format for prioritizing the issues and removed the assigning of dots; however, they also removed the ability of or did not provide opportunity for members of non-FWR stakeholders to directly challenge priorities put forth by the FWR stakeholders, some of which were very controversial. This was done in an effort to preserve the process because it had become apparent that the non-FWR stakeholders were weary of the FWR Stakeholders' tactics and the process was at risk of devolving.

While we may not agree with every part of the Water Plan Executive Summary or its supporting documents we believe that the update process provided adequate opportunity for stakeholder input and was mostly fair and transparent with the exceptions of AGFC staff participation and the shenanigans of the FWR Stakeholders.

We encourage the Commission to view the recommendations made by the FWR Stakeholders with a good deal of skepticism and proceed cautiously with those that they choose to accept and implement.

Key Findings

2.1 Demand Projections

The third bullet states, *“One factor in estimating the projected demand for crop irrigation is the water application rate for each crop. While the best available data was used for the 2014 AWP analysis, stakeholder input suggests that the application rate, particularly for rice, is too high. The alternatives analysis (Appendix G) suggests that varying the application rate could decrease the crop irrigation water demand by about 1.3 million AFY.”* (Emphasis added.)

The last sentence of the Section 11.2 of the Water Demand Forecast Report states, *“Statewide total demand is shown in Table 11.4 with estimated irrigated crop water demand increasing from 8.8 billion gallons per day up to 10 billion gallons per day in 2050.”* (Emphasis added.) This represents a 1.2 million AFY increase, or 13.6% increase, in crop irrigation. If assumptions about varying crop irrigation rates are correct as discussed in the first paragraph, there may be an overall decrease in agricultural crop irrigation demand rather than a 13.6% increase.

Another issue to consider is the assumption that 100% of tillable acres would become irrigated by 2050. The Agriculture Stakeholders may have been overly ambitious when they suggested that 100% of tillable acres in every county would become irrigated. The logic was that over the past 40 years irrigation has been heavily adopted. As a result, the current percent irrigated acreage is estimated to be 86-87% according to USDA-NASS data. It seemed reasonable to assume that the remaining non-irrigated tillable acres would become irrigated over the next 40 years. While this scenario is possible, it may not be probable and may have exacerbated projected supply “gaps.”

There are some counties that are already irrigating every available tillable acre; there are counties with substantial amounts of non-irrigated tillable acreage; and there are counties that contain tillable acres that are not currently in production. If it was assumed in counties with available tillable acreage not currently in production that those acres would be brought into production AND they would be irrigated, it may have unnecessarily elevated agricultural crop irrigation demands to unrealistic levels and may have further exacerbated projected supply “gaps.”

None of these scenarios incorporated the conservation measures that are being adopted by the agriculture community. Some of these conservation measures can reduce water usage by as much as 30% and significantly more when used in combination. In conjunction with the considerations discussed above, adoption of

conservation measures should be simulated assuming an incremental adoption rate of 10% until at least a 30% savings is reached on existing irrigated tillable acres and immediate adoption on tillable acres not currently irrigated.

The combination of the above scenarios could reflect significantly reduced projected demands from agriculture crop irrigation and quite possibly project an overall reduction in demand from current levels.

The tenth bullet states, “. . . *there is a recognized need to shift to using empirical, risk-based ecological response/flow relationships as the foundation for determining fish and wildlife flows in the future.*”

This language is an overstatement of the need to evaluate alternative methods of determining minimum stream flows and excess surface water and is written as if the framework proposed by the Fish & Wildlife Flows Subgroup and the FWR Stakeholders has been accepted by the other stakeholder groups. The FWR Stakeholders may believe there is a “recognized need” but the Agriculture Stakeholders and other non-FWR Stakeholders are not so certain.

In fact, the 2nd Paragraph of Section 7.1 on page 7-1 of the Water Availability Report, states, “*The general opinion of the subgroup was that a new method is needed to determine fish and wildlife flow requirements; one that better addresses relationships between ecology and hydrology.*” (Emphasis Added)

The Fish & Wildlife Flows Framework was written by the contractors with the assistance of the Fish & Wildlife Flows Subgroup and FWR Stakeholders after a series of meetings that began in March 2013. The Framework was ultimately included as Section 7 of the Water Availability document. The inclusion of the Framework was somewhat concerning because there was little opportunity to discuss the science supporting it.

The FWR Stakeholders reason for shifting to alternative methods of calculating minimum stream flows and excess surface water was to replicate natural flow regimes, i.e. seasonality, flooding flows, flushing flows, low flows, etc., and their preferred method of doing this was via the Ecological Limits of Hydraulic Alteration (ELOHA). However, while ELOHA was the basis for their preferred methodology, the FWR Stakeholders intentionally avoided discussing it during stakeholder meetings.

It is uncertain that all stakeholders have an adequate understanding of the Framework because there was not an in depth discussion of it. It was suggested to the contractors that the information presented at the March 2013 meetings of the Fish & Wildlife Flows Subgroup should be presented to ALL stakeholders so that they might develop a better understanding of what the FWR stakeholders were proposing. While the presentations during the Statewide Water Availability Stakeholder meeting did include information about the Framework, we believe the level of detail and explanation was insufficient.

Many believe that the Modified Tenant Method and the Arkansas Method have served Arkansas well, that there has been no demonstrated reason to shift to alternative methods of calculating minimum stream flows or excess surface water, and that these current methods simply need to be updated using current flow data. Adopting the Framework will eventually do away with these current methods, essentially negating the discussion in Section 3.3 of what the excess surface water limitation should be.

A representative of the FWR Stakeholders has repeatedly stated that they are not interested in and have no desire to renegotiate the preallocation plan established for the lower White River or to apply the Framework to Eastern Arkansas rivers. Their explanation is that those river systems are already heavily modified and that their goal is to protect largely unaltered Ozark and Ouachita Mountain creeks, streams and rivers. However, it is somewhat disingenuous for them to say they aren't interested in using these same methodologies for larger river systems. Are we to believe that the purpose of the proposed Framework is to return some but not all streams to their natural flow regimes and to maintain the natural flow regimes of mostly unaltered streams?

Additionally, during the Issues & Recommendations Workgroup one of the recommendations submitted by the FWR Stakeholders was, *"AWP should include a Healthy Streams policy statement for flow alterations and non-point source pollution, similar to, and complimentary of, ADEQ's Regulation 2 anti-degradation policy for point source discharges."*

This would essentially link the natural flow regimes of Arkansas' waterbodies to the antidegradation policy of the Arkansas Pollution Control & Ecology Commission's (PCE) Regulation 2. Antidegradation is a specific term used in the Clean Water Act and PCE Regulation 2 which sets Arkansas water quality standards. It essentially means that once a standard has been set "backsliding" is not allowed and that standard can never be less stringent. So, linking the flow regime of waterbodies to the antidegradation policy of Regulation 2 effectively means that the flow regime of those waterbodies can never be altered. This could potentially put those waterbodies completely off limits for withdrawals for riparian and non-riparian uses.

The Framework proposed by the FWR Stakeholders poses potentially significant economic risks for Arkansas' economy. Arkansas economy is agriculture based with approximately 20% of the State's GDP represented by agriculture. Any changes to minimum stream flow or excess surface water methodologies could significantly reduce the volume of surface water available for out-of-stream riparian and non-riparian agriculture use. A loss of access to water will have potentially significant economic ramifications for not only the agriculture community but for the entire state. Any decision to shift how minimum stream flow and excess surface water are determined must be accompanied by a rigorous economic cost benefit analysis.

2.4 Gap Analysis

The third bullet states, *“Three major river basins are projected to have a water supply gap in 2050 taking into account both groundwater and surface water supplies: Bayou Macon, Boeuf River, and L'Anguille.”*

The fourth bullet states, *“The Boeuf River Basin is projected to experience a surface water gap (supply less than demand) in June, July, and August based on average flow conditions over the period of record.”*

The Bouef-Tensas Basin Study should be funded such that planning for the development, utilization and conservation of water and related land resources can be completed. The US Secretary of Agriculture should expand ongoing investigations and coordinate through the Natural Resources Conservation Service to develop a multi-purpose flood control and comprehensive agricultural water supply plan, including but not limited to a canal system for Chicot, Desha, Ashley, Drew, Lincoln and Jefferson counties in Southeast Arkansas.

Priority Issues & Recommendations

3.1 Conjunctive Water Management and Groundwater Decline

Recommendation 1 states, *ANRC will seek authority to purchase, install, and read meters on selected alluvial wells including the authority to lease or condemn sites for meter installation.*

We are also supportive of voluntary efforts such as the above proposed metering program with the exception of the Commission having condemnation authority.

Arkansas has been nationally recognized as having the model water-use registration program by which all other states are judged. This program in conjunction with the USDA-NASS data and UofA Division of Agriculture research has provided a significant amount of data related to water use. While there is always room for improvement, extreme measures such as condemnation are unnecessary to improve the accuracy of water use reporting to sufficiently satisfy the Commission’s goals related to increasing the accuracy of and confidence in its water-use registration program.

The voluntary metering program will serve as a means to validate the existing Water User Database (WUDB). Many leaders in the agriculture community have already indicated an interest in and willingness to participate in a metering program. Farm Bureau is ready to assist the Commission in identifying willing participants.

3.2 Drought Contingency Response

While this section does list the Commission's regulations related to the allocation of water during times of shortage there is no discussion of the State's priorities related to Reserved Uses and Allocatable Uses as defined by A.C.A. § 15-22-217. This statute lists agriculture as having the highest priority among the allocatable sources and behind only those considered "Reserved Uses."

3.3 Excess Water for Nonriparian Withdrawal and Use

The 1st and 2nd paragraphs of the 2nd column on page 12 state, *"The 25% number referenced in the excess surface water definition is an arbitrary number without a scientific basis adopted by the Arkansas General Assembly to provide some protection to the uses identified above.*

Because there is no scientific basis for this number, . . ."

While there may not be a strict scientific basis for the 25% limitation, it is commonly accepted engineering design practice to apply a safety factor based on the confidence level in the data used to perform calculations. A 25% limitation is essentially the same thing as a safety factor of 4 which is extremely conservative. More commonly applied engineering factors of safety are 1.1 to 2.0 depending on the type of design being performed. These factors of safety essentially equate to limitations of 59% to 77%.

It has been almost 25 years since the last AWP update. During that time flow data collection, the accuracy of the data collected, and our understanding of hydrology have significantly improved. The permitting of excess surface water used by non-riparians has also been improved to better account for the number of users and volumes permitted. These improvements have significantly increased the level of confidence that can be placed on available supplies and instream needs. The Commission should be very confident in increasing the amount of excess surface water available for use from 25% to 75%. This was also a recommendation made in the 1990 AWP.

3.4 Funding Water Resources Development Projects

Recommendation 1. States, *"As an initial step, authorize an additional \$300 million under the Water, Waste Disposal, and Pollution Abatement Facilities General Obligation Bond Program at the appropriate time. Additional authorization will be requested as needed to finance and refinance the development of these water resources projects."*

In areas where "gaps" are projected to occur, the water plan should consider how those gaps might be remedied, i.e. the construction of large scale surface water irrigation projects and the funding necessary to construct them.

Also, an issue that received little discussion during the stakeholder process was recharging aquifers using surface water. Studies have been performed in the past that determined costs to be prohibitive; however, aquifer recharge should not be dismissed as unfeasible without at least a basic evaluation. A cost benefit analysis of large scale surface water irrigation projects should also include aquifer recharge alternatives. Large surface water users in the Phoenix, Arizona, area, such as the Central Arizona Project and the Salt River Irrigation Project, are currently using surface water to recharge their aquifer. Similarly, the City of Wichita, Kansas, is using surface water from the Little Arkansas River to recharge the Equus Beds Aquifer.

3.5 Improving Water Quality through Nonpoint Source Management

Recommendation 2. b. states, *“Streams currently attaining water quality standards in priority watersheds will be considered for protection through the NPS management program.”*

Recommendation 3. states, *“Study whether nutrient management plans should be required outside current nutrient surplus areas.”*

Many in Northwest Arkansas still question the methodology used to establish the Nutrient Surplus Areas (NSAs) and still believe that they were not based on science, but resulted from political and legal pressure from the state of Oklahoma. The adoption of the Arkansas Phosphorus Index (P-Index) and phosphorus based nutrient management plans (NMPs), the most restrictive in the country according to some, significantly reduced poultry litter application rates, i.e. nutrients, in Northwest Arkansas and throughout the NSAs. This cost agriculture producers tens of millions of dollars and possibly significantly more.

Adoption of the Arkansas P-Index and P-based NMPs, has influenced nutrient applications outside of the NSAs as well. While not a written clause in poultry growers' contracts, is it common knowledge that the poultry companies require their contract growers to obtain NMPs regardless of their location. Combining this with the fact the USDA-NRCS and the county conservation districts will not write non-phosphorus based NMPs means that the NSAs have essentially already been expanded statewide.

Regarding row crop production, nutrients are one of the largest input costs for row crop farmers. It does not make economic sense for them to apply more nutrients than a crop requires. New technologies and best management practices such as grid sampling, variable rate fertilizer applications, cover crops, tailwater recovery, etc., are being rapidly adopted to ensure that the precise amount of nutrients are applied and that the nutrients stay in the field where they are needed. While this is occurring for economic reasons, it also results in environmental benefits.

In addition, the placement of a waterbody on the 303(d) does not mean it is, in fact, impaired. Many water quality impairments are not actual impairments. They are

artificially induced impairments due to the methodologies used to establish Arkansas' water quality standards. Others are due to the frequency of data collection, or lack thereof, and a 10% exceedance threshold. As a result of such a low exceedance standard, a very small number of data points can result in a standard being exceeded, requiring a waterbody to be placed on the 303(d) List and ultimately requiring the development of a TMDL.

A specific example is the TMDLs that were written for the Bayou de View and Cache River in 2012. These TMDLs were driven by a very small number of samples (n=20 +/-) that were collected during an approximately twenty-year period. Because of the small sample size only 2-3 exceedances were required for the water quality criterion to be exceeded. Samples collected in 2003 exceeded the current criterion; however, samples collected in 2008 and 2009 showed declining trends in the constituents of concern. So, a 10% exceedance of 2-3 samples caused these waterbodies to unnecessarily be placed on the 303(d) List and ultimately a TMDL to be written. However, when additional samples were collected, Bayou de View was removed from the 303(d) List.

The 303(d) List is not the "be all, end all" when determining if a waterbody is truly impaired. 303(d) listed waterbodies should be given the proper amount of consideration based on the amount and type of data used to determine if they are impaired. The 303(d) List should be one of many parameters that are considered.

Agriculture producers believe in the responsible use of nutrients for environmental reasons as well as economic reasons. The Discovery Farms Program was created to determine what agriculture's contribution of sediment and nutrients were to the state's waterbodies. Early results from ongoing research are showing minimal sediment and nutrient transport from agriculture fields. While several more years of research are necessary before any conclusions can be made, these numbers suggest that agriculture is using nutrients wisely, implementing BMPs and being good environmental stewards. It is for all the above discussed reasons that no justification currently exists to expand the NSAs.

3.6 Public Awareness and Education

No comments.

3.7 Public Water and Wastewater Infrastructure

No comments.

3.8 Reallocation of Water Storage in Federal Reservoirs

The recommendation for this section states, *"Reallocation of water storage in USACE reservoirs, based on the revised 1977 Water Supply Act guidance manual, should be sought*

if there is a documented need for additional water for domestic, municipal, or industrial water supply."

Agricultural needs should also be given consideration as part of this evaluation. ARFB is supportive of releasing public impounded surface waters for use in critical areas should shortages develop in agriculture; however, ARFB also acknowledges that humanitarian life-sustaining needs, i.e. drinking water, should be the highest priority during times of shortage. After humanitarian needs are met water for food production should receive the highest priority.

3.9 Tax Incentives & Credits for Integrated Irrigation Water Conservation

Recommendation 2 states, *"Evaluate the effectiveness of the existing tax credits and incentives and, based on this assessment, consider: a. Increasing the percentage of the total project cost available for tax credits based on applicants improving their irrigation water use efficiency compared with the goal or target efficiency, b. Extending the period for claiming tax credits for implementing water conservation practices, c. Increasing the annual cap on tax credits so additional tax credits can be claimed, and d. Tracking the acreage on which water conservation practices have been implemented along with the tax credits."*

The Water Plan Executive Summary mentions in several locations that agriculture is the largest water user in Arkansas. Agriculture readily acknowledges that it is, without question, the largest water user; however, this water use is for a very noble and life sustaining purpose . . . the production of food and fiber that is used to feed and clothe not only Arkansans but the world.

While feeding and clothing the world, agriculture has also made significant strides by reducing its environmental footprint as documented through independent evaluations performed by Field to Market®. Field to Market® evaluated land use, soil erosion, irrigation water applied, energy and greenhouse gas emissions over a more than thirty year period beginning in 1980. These evaluations revealed that agriculture has reduced its environmental footprint on a per unit produced basis for every parameter evaluated for every commodity considered and on an overall basis depending on the commodity considered. What does this mean? Agriculture is producing more food and fiber per acre while at the same time reducing soil erosion and water usage, i.e. it is more efficient and a better steward of natural resources than at any time in history. For commodity specific information, go to: <https://www.fieldtomarket.org/report/>.

Implementation 2. States, *"ANRC will work with Conservation Districts to develop a ranking system for cost-sharing support that encourages, and provides higher ranking to, applications that include multiple, integrated conservation practices, with flow meters being included in these suites of practices. This ranking system should also consider perpetual easements for eliminating land from agricultural production and irrigation."*

ARFB supports increasing cost share incentives to increase the rate of voluntary meter installation. However, while ARFB supports individuals' rights to voluntarily enter into conservation easements, we do not encourage the use of perpetual easements. In many cases, they are counterproductive because they reduce adoption rates, and an uncertain future may reveal that every tillable acre may be needed for food production.

The utilization of surface water for irrigation has been shown to have a positive impact on water quality and reduces groundwater use. ARFB recommends the incorporation of incentives that support increasing surface water use for irrigation by expanding the adoption of reservoirs and tailwater recovery systems. Some incentives the Commission might consider are: (1) Cost sharing of 10 percent of the installation costs of irrigation water supply projects that are also federally cost shared; (2) Funding state cost-share programs via revenue bonds; (3) Encouraging federal farm program payments comparable to CRP, WRP, or similar programs for cropland that has been converted to surface water irrigation reservoirs; and (4) In areas of significant groundwater level decline (a) groundwater depletion taxes could be allowed which could be used only for groundwater to surface water conversion projects, and (b) revenue bonds could be available for long-term low interest loans or state funding could be made available to "buy-down" interest on commercially available loans for the construction and use of irrigation reservoirs and tailwater recovery systems. These projects should be prioritized to watersheds which have been declared to have impaired water quality or are within critical groundwater areas.

The Commission should also consider streamlining procedures for land leveling and irrigation reservoir construction to qualify for Arkansas income tax credits under the Water Resources Conservation and Development Incentives Act of 1995. The project design and construction costs should be allowed to be submitted for qualification at any time during a project's construction, including up to the time of final inspection and issuance of certificate of completion. These tax credits should be available for all qualifiable projects completed in a tax year.

Supporting Issues

3.10 Water Use Reporting

We are supportive of accurate reporting of both surface water and groundwater usage. If the following things are not already being done, the Commission should consider: 1) developing uniform standards or improving existing standards for water use reporting, 2) requiring and funding mandatory regular training for staff to ensure uniform implementation of water use reporting, 3) developing an electronic template for data collection, and 4) developing online water use data reporting.