



# Arkansas WATERplan

Essential For Life



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# 2014 AWP Update Organization

- **Overview**
  - Focus on issues, recommendations, and implementation
- **Arkansas Water Plan**
  - Issues, Recommendations, and Implementation
  - Key Findings
  - Statewide Synopsis
  - Water Resource Planning Areas
- **Appendices**
  - Technical memos and reports that support the AWP

# Schedule for AWP Completion

- Draft for Public Review
  - Accepting comments until October 24
- Final AWP
  - ANRC adoption in November



# Issue: Conjunctive Water Management and Groundwater Decline

## Recommendations:

- 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.
- Develop and implement conjunctive water management strategies based on storing surface water, during months when excess water is available, for use during the summer irrigation months when excess surface water is not available.
- Groundwater use would supplement surface water use, rather than being the primary irrigation water source.
- Encourage and increase irrigation water use efficiency through integrated irrigation water management and conservation practices over the next decade.



# Issue: Incentives for Integrated Irrigation Water Conservation



## Recommendations:

- Determine the current irrigation water use efficiency for various crops and subwatersheds in the East Arkansas Region and establish a goal or target efficiency
- Evaluate the effectiveness of the existing tax credits and incentives and, based on this assessment, consider:
  - Increasing the percentage of the total project cost available for tax credits based on meeting the efficiency goal or target efficiency,
  - Extending the period for claiming tax credits for water conservation practices,
  - Increasing the annual cap on tax credits so additional tax credits can be claimed, and
- Track the acreage on which water conservation practices have been implemented along with the tax credits.

# Issue: Funding Water Resources Development Projects

## Recommendations:

- 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.
- ANRC will seek the authority to merge water and sewer systems where necessary in order to bring them into economic viability.



# Issue: Public Water and Wastewater Infrastructure



## Recommendations:

- Public entities operating water and wastewater infrastructure or flood control and drainage projects should develop sustainability plans that evaluate:
- Current infrastructure status and historical trends in status;
  - Needed infrastructure repairs, replacement, and maintenance and associated schedules;
  - Federal and State programs available to support infrastructure projects; and
  - Contingency plans, including the potential for regionalization or privatization (private water wells, septic systems, decentralized systems, etc.), if the utilities are assessed to be unsustainable.
  - Receivership proceedings should be initiated for public water and wastewater providers that have defaulted on loans.
- Training programs should be developed for utility boards of directors on sustainability planning and how these plans relate to the operation of their facilities and infrastructure. Utilities that submit a sustainability plan with funding applications could receive lower rates on loans.

# Issue: Excess Water for Non-Riparian Withdrawal and Use



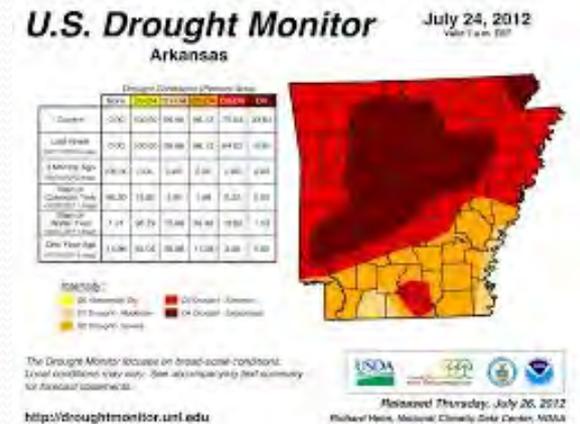
## Recommendations:

- Remove the 25 percent limitation for estimating excess water available for nonriparian transfer and conduct scientific studies to determine what proportion of the total available water is seasonally appropriate to satisfy the required uses specified in statute by major basins and subbasins in each planning region
- Continue to use the Arkansas Method in estimating the proportion of total available water needed to satisfy fish and wildlife flow needs in estimating excess water for nonriparian withdrawals and transfers.
- Engage stakeholders in the planning regions through an open and transparent process as the scientific study is being conducted by ANRC and as better scientific approaches become available and are proposed for use.

# Issue: Drought Contingency Response

## Recommendations:

- Develop a coordinated drought contingency response network among State and federal agencies; drinking water utilities, organizations, and institutions; and the private sector for alerting the public about impending droughts, sharing consistent messages and information, and providing information on voluntary conservation measures to reduce water use.
- Seek funding and ensure stream gaging networks throughout the State are adequate to provide streamflow information needed to make informed decisions about impending or advancing droughts statewide and within each planning region.



# Issue: Reallocation of Water Storage in Federal Reservoirs

## Recommendation:

- 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.



# Issue: Improving Water Quality through Nonpoint Source Management

## Recommendations:

- Propose legislation to designate funding specifically for financing NPS pollution management programs and implementing NPS management practices.
- ANRC will collaborate with ADEQ and AGFC through the biennial Clean Water Act (CWA) water quality review processes, and the water quality criteria review to determine attainment or nonattainment of water quality standards in streams and identify the sources and causes of nonattainment.
  - Streams impaired because of NPS pollution will be considered as priority streams for restoration through the NPS management program.
  - Streams currently attaining water quality standards in priority watersheds will be considered for protection through the NPS management program.
- Study whether nutrient management plans should be required outside current nutrient surplus areas.
- Leverage funding from multiple sources such as Source Water Protection under the Safe Drinking Water Act, administered through the ADH, to address NPS pollution in watersheds with drinking water sources.

# Issue: Public Awareness and Education

## Recommendation:

- The ANRC will collaborate with the Arkansas Water Foundation, the Arkansas Association of Conservation Districts, the University of Arkansas (U of A) Cooperative Extension Service, and others to develop and disseminate public information. This information should focus on water conservation practices being implemented by agriculture in Arkansas, the contributions of agriculture to the economy, food security, the quality of life in Arkansas, advances in water conservation technology, and trends in groundwater and surface water use.



# Supporting Issue: Water Use Reporting

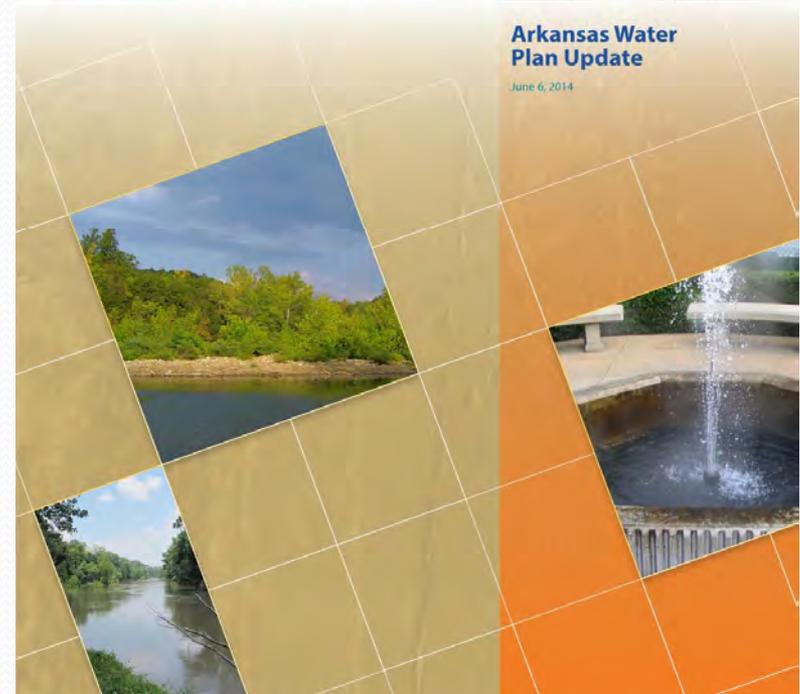
## Recommendation:

- ANRC should form an Agricultural Irrigation Science Technical Work Group to:
  - Review the water use reporting process for agricultural irrigation,
  - Modify the ranges for accepted water use by crop type, if needed for greater accuracy,
  - Evaluate various quality assurance criteria and approaches for confirming crop type and acreage, and
  - Assess the adequacy of the surface water and groundwater monitoring network in providing confirmation of the aggregate or cumulative withdrawal of groundwater and surface water for agricultural irrigation.
- This workgroup should also periodically review advances in technology for measuring and estimating water use and water use reporting and provide recommendations to the ANRC on incorporating these advances in their water use reporting programs.
- Finally, ANRC should continue and improve awareness and education programs, in conjunction with Conservation Districts, to explain and promote the water use reporting program currently in place and any future improvements.



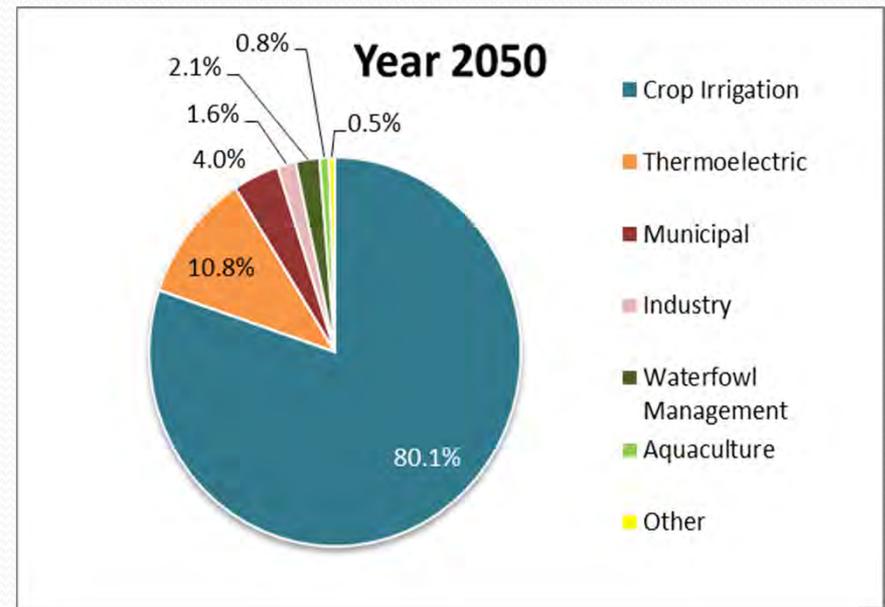
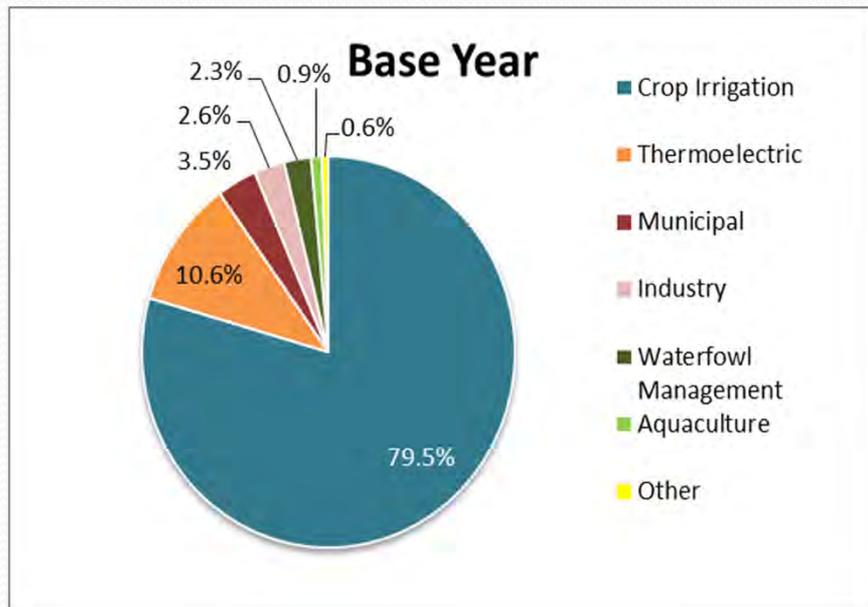
# 2014 AWP Update Contents

- Letter from the Commission
- Preface
- Introduction
- Key Findings
- Issues and Recommendations
- Implementation Plan
- General Description of the State
- Framework for Water Management
- Water Resource Planning Region Summaries



# Demand Projections

*Statewide water demand is expected to increase from the current 12 million AFY up to about 14 million AFY by 2050.*



# Statewide Water Availability

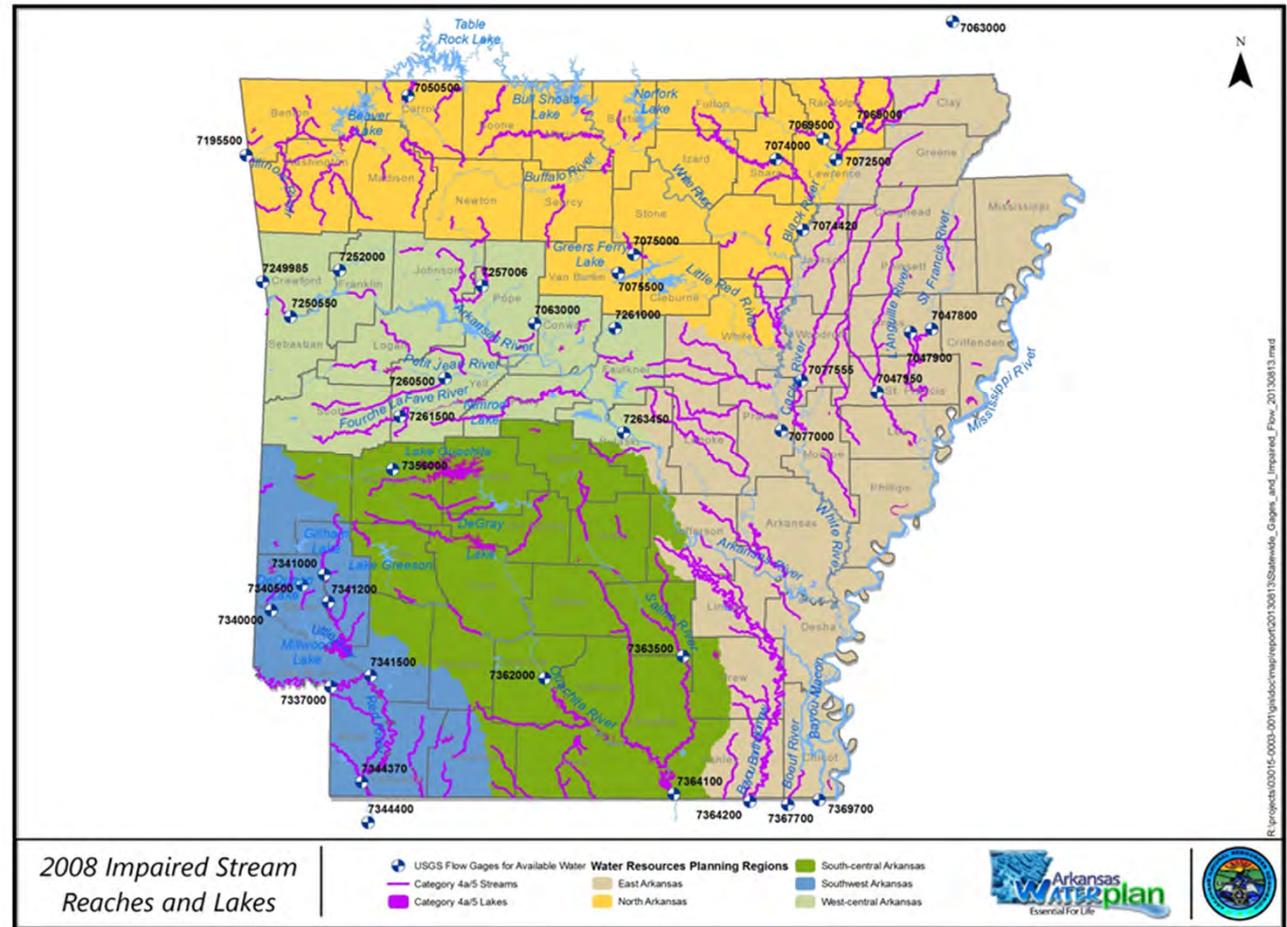
**8.7 Million AFY**  
of excess  
**surface water**  
available



**20%**  
*of the East  
Arkansas 2050  
groundwater  
demand can be met*

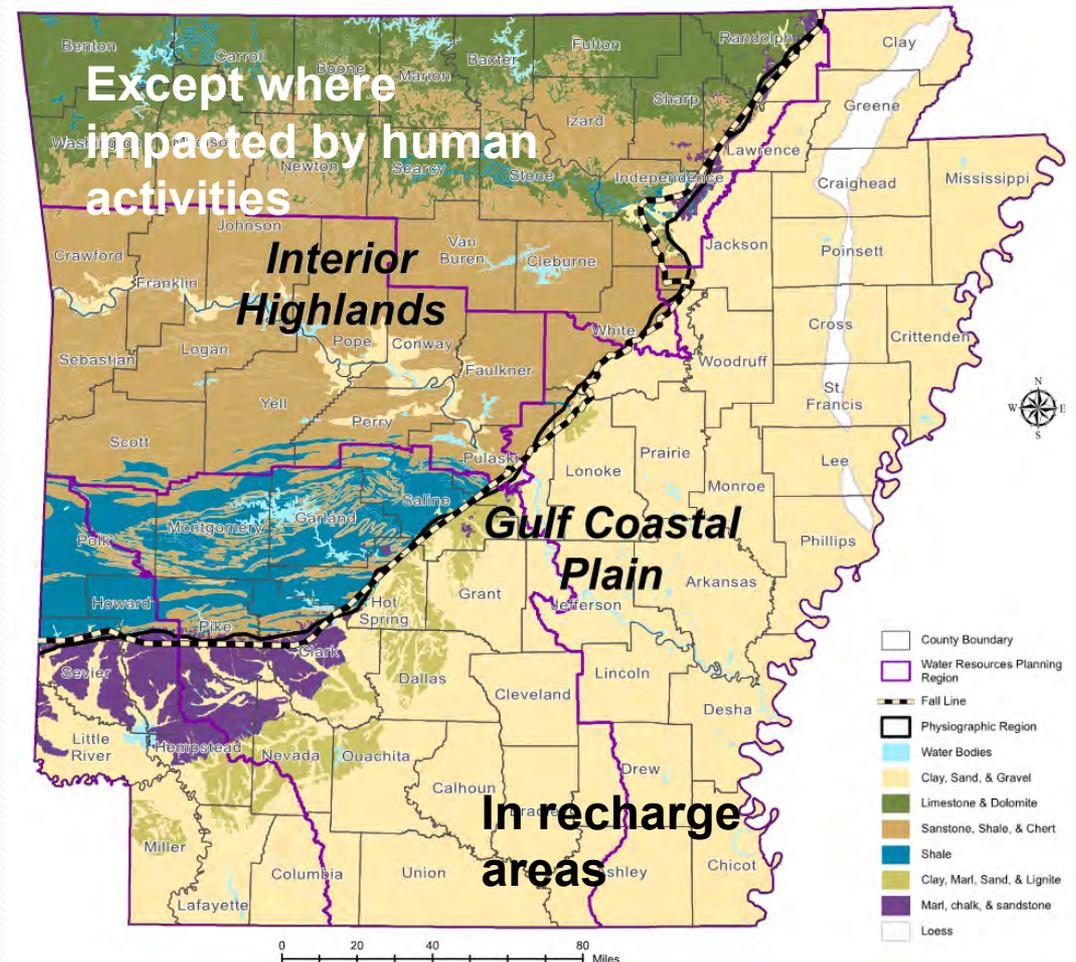
# Surface Water Quality

59% of 9,849 Stream miles and 64% of 357,896 Lake acres assessed had **quality** that supported the uses of the water



# Groundwater Quality

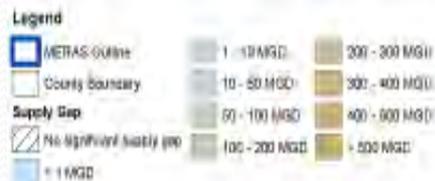
*Groundwater quality is generally good.....*



# Gap Analysis



In the East Region, the projected 2050 groundwater supply will be adequate to irrigate 1.8 million acres, ***if no AWP recommendations are implemented.***



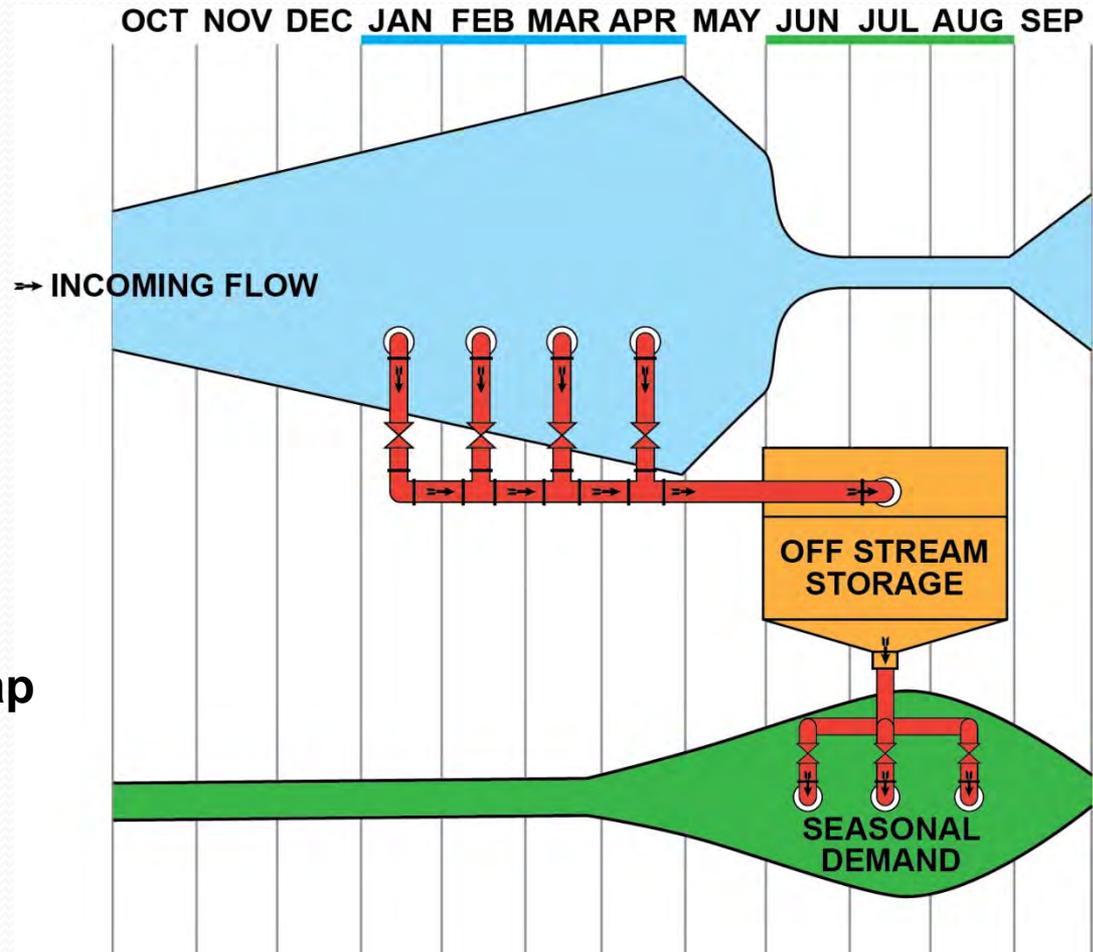
# Conjunctive Water Management

## Projected River Basin Surplus

- Arkansas River
- Ouachita River
- Red River
- White River
- Bayou Bartholomew
- St. Frances

## Projected River Basin Supply Gap

- Bayou Macon
- Boeuf River
- L'Anguille



# Progress since 1990 AWP

Grand Prairie Area  
Demonstration Project



Sparta Recovery in  
Union County



Bayou Meto Water  
Management Project



Plum Bayou Project



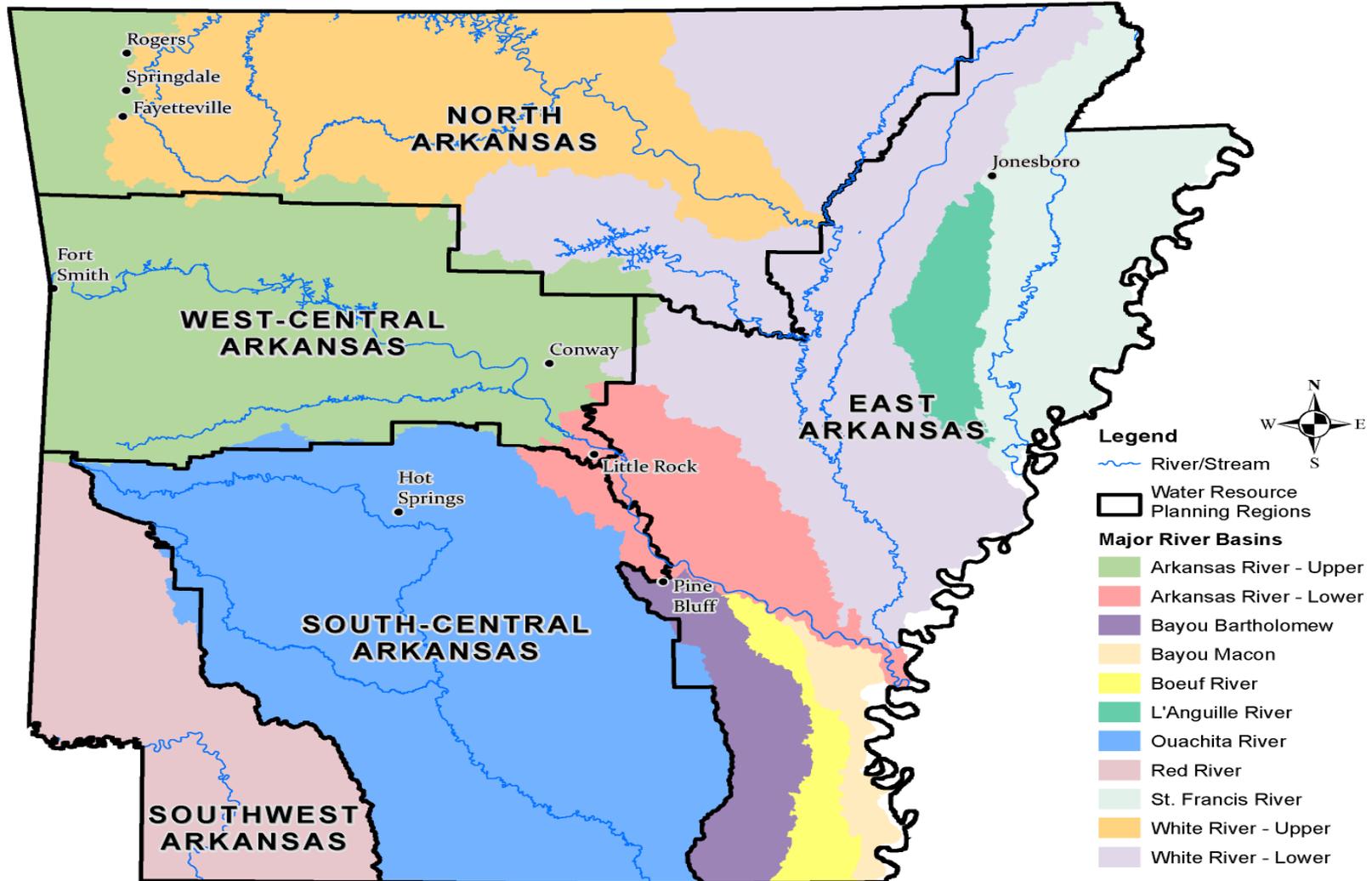
Agricultural Water Conservation



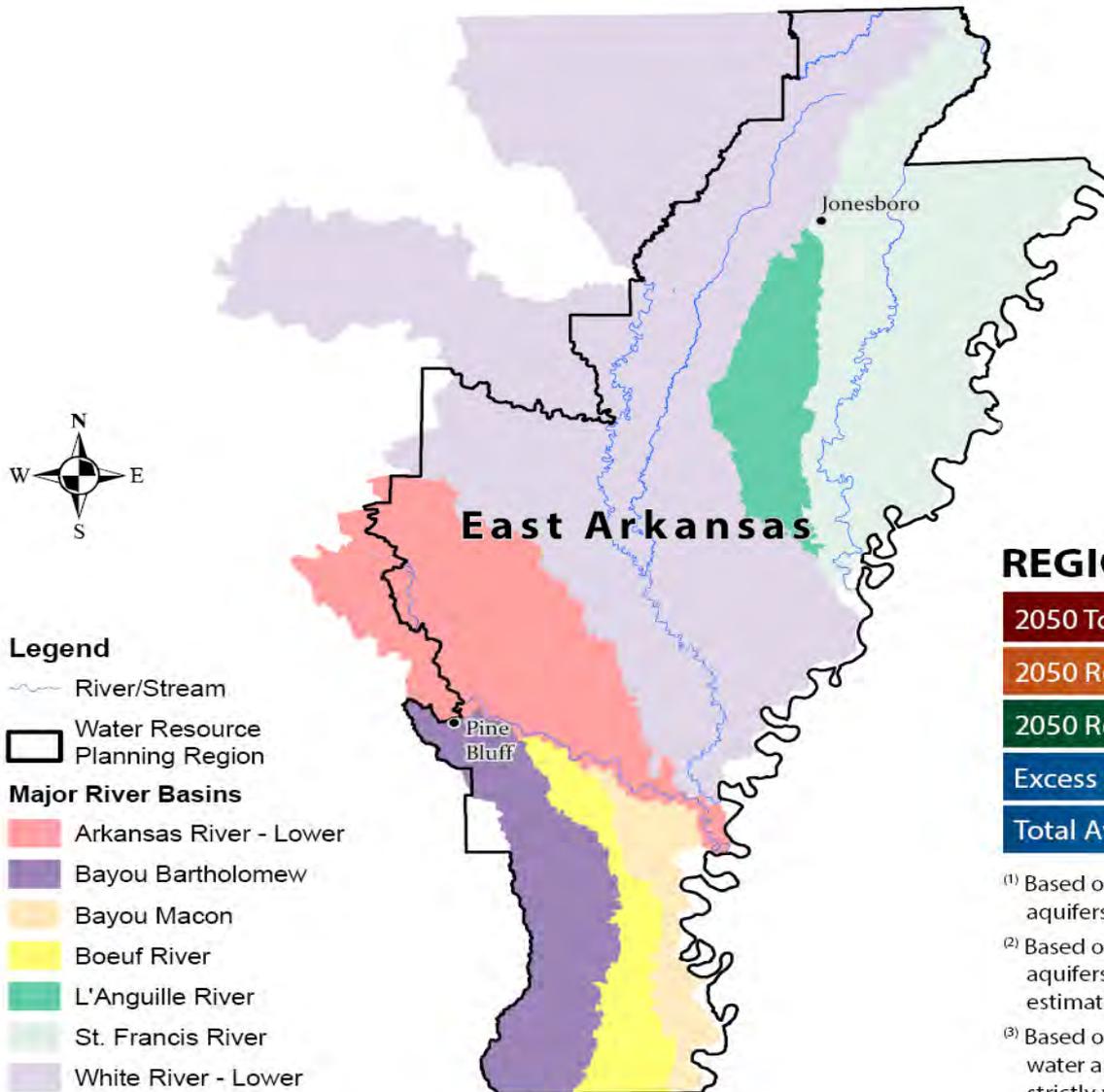
# 2014 AWP Update Implementation



# Water Resources Planning Regions on Major Surface Water Basins



# East Region Overview

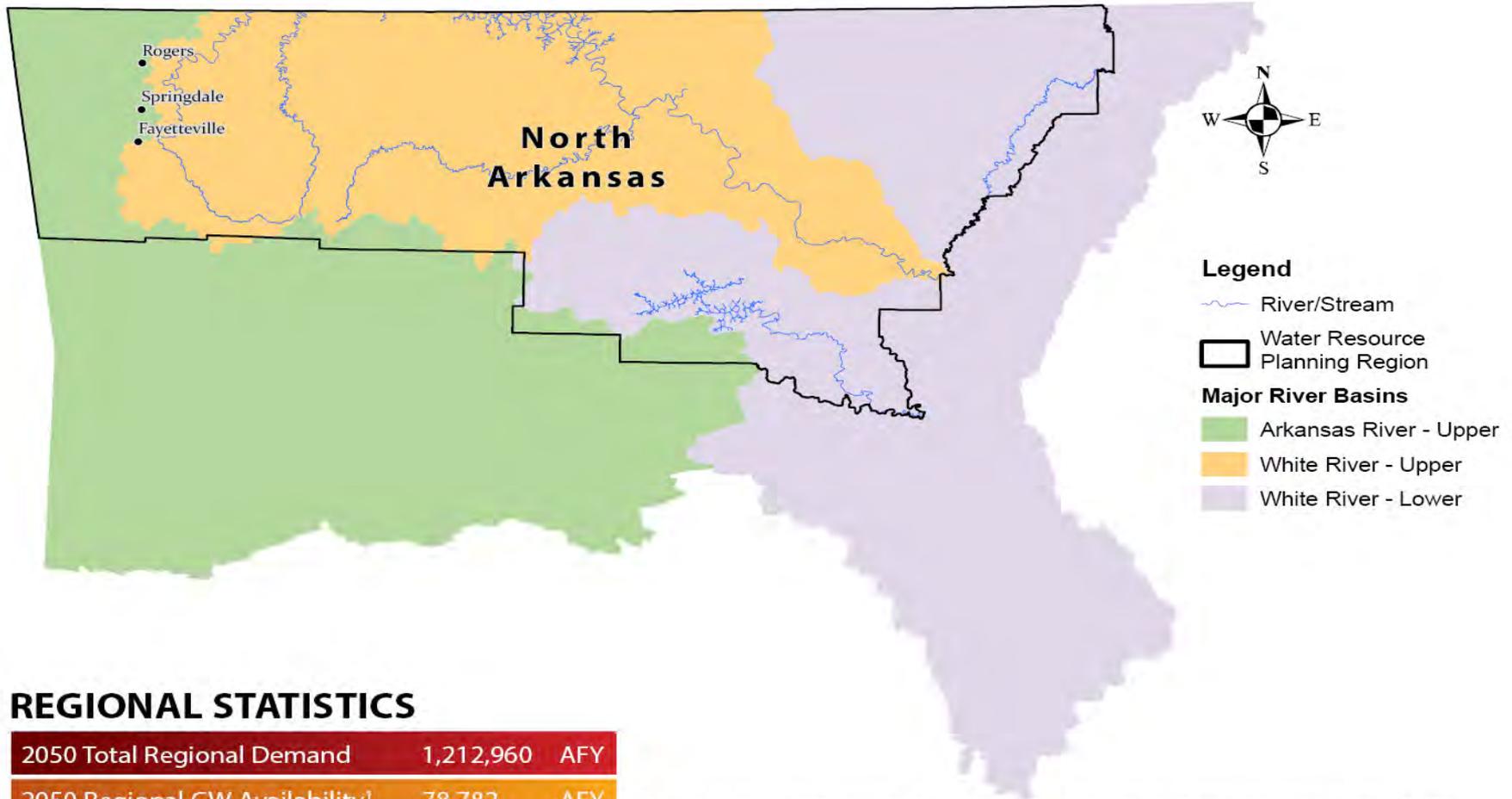


## REGIONAL STATISTICS

2050 Total Regional Demand	11,222,400 AFY
2050 Regional GW Availability <sup>1</sup>	1,809,405 AFY
2050 Regional GW Gap <sup>2</sup>	(7,259,810) AFY
Excess Surface Water <sup>3</sup>	6,379,753 AFY
Total Available Surface Water <sup>3</sup>	25,574,275 AFY

- <sup>(1)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area
- <sup>(2)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area, otherwise gap was estimated to equal projected growth in groundwater demand
- <sup>(3)</sup> Based on hydrologic analysis of major basins. Excess surface water and total available surface water may not be developed strictly within the planning region

# North Region Overview



## REGIONAL STATISTICS

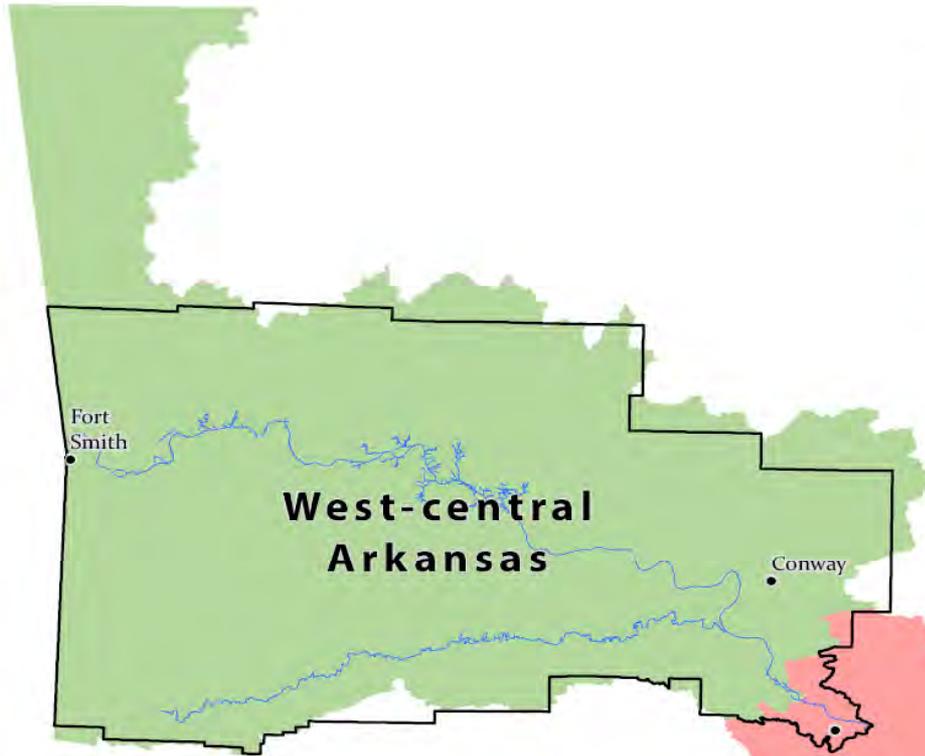
2050 Total Regional Demand	1,212,960	AFY
2050 Regional GW Availability <sup>1</sup>	78,782	AFY
2050 Regional GW Gap <sup>2</sup>	(661,869)	AFY
Excess Surface Water <sup>3</sup>	5,388,109	AFY
Total Available Surface Water <sup>3</sup>	21,552,437	AFY

<sup>(1)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area

<sup>(2)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area, otherwise gap was estimated to equal projected growth in groundwater demand

<sup>(3)</sup> Based on hydrologic analysis of major basins. Excess surface water and total available surface water may not be developed strictly within the planning region

# West-central Region Overview



## REGIONAL STATISTICS

2050 Total Regional Demand	1,123,360	AFY
2050 Regional GW Availability <sup>1</sup>	9,900	AFY
2050 Regional GW Gap <sup>2</sup>	(56,932)	AFY
Excess Surface Water <sup>3</sup>	3,307,616	AFY
Total Available Surface Water <sup>3</sup>	13,230,466	AFY

<sup>(1)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area

<sup>(2)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area, otherwise gap was estimated to equal projected growth in groundwater demand

<sup>(3)</sup> Based on hydrologic analysis of major basins. Excess surface water and total available surface water may not be developed strictly within the planning region



### Legend

River/Stream

Water Resource Planning Region

### Major River Basins

Arkansas River - Upper

Arkansas River - Lower

# South-central Region Overview



## Legend

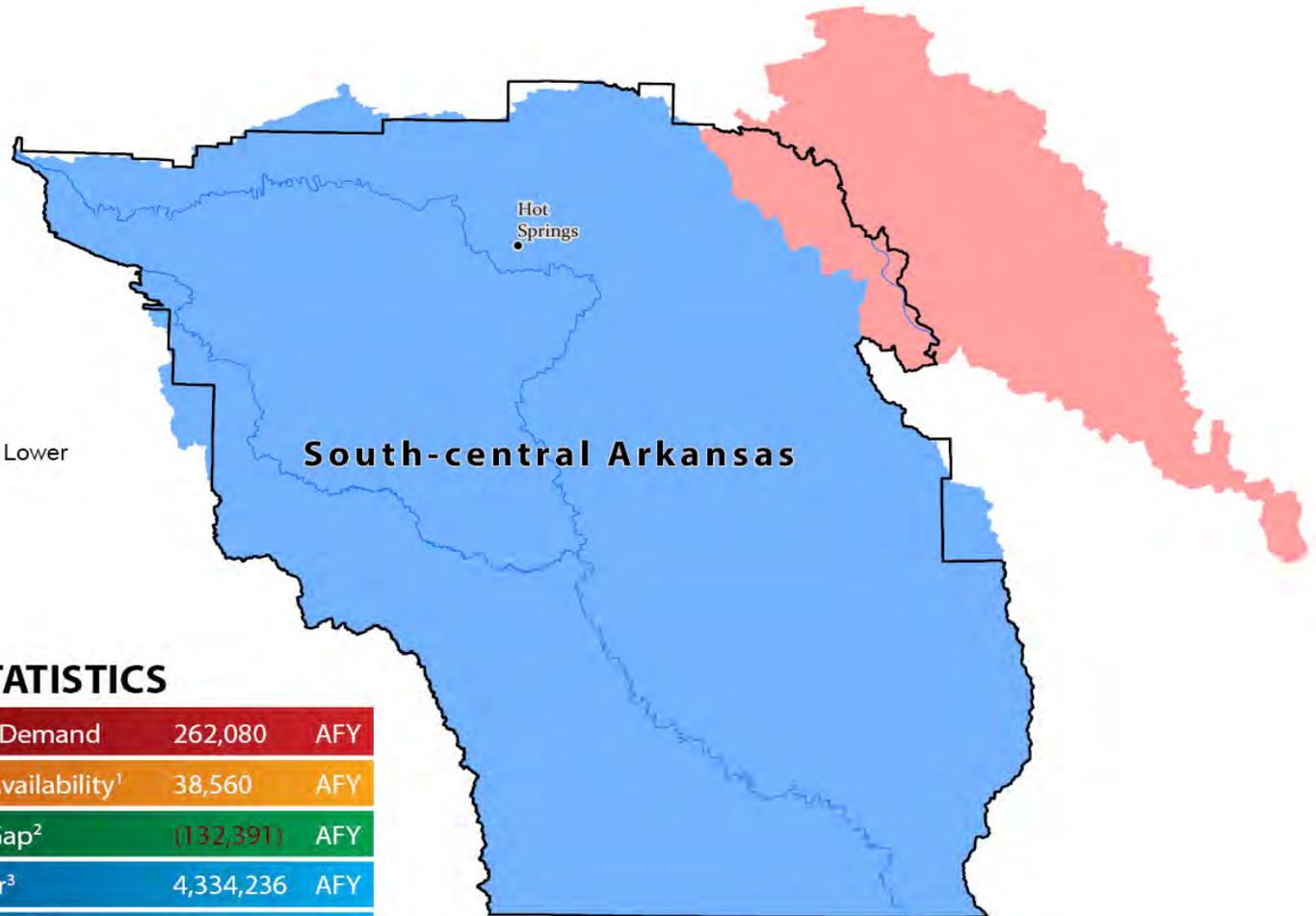
River/Stream

Water Resource Planning Region

### Major River Basins

Arkansas River - Lower

Ouachita River



## REGIONAL STATISTICS

2050 Total Regional Demand	262,080	AFY
2050 Regional GW Availability <sup>1</sup>	38,560	AFY
2050 Regional GW Gap <sup>2</sup>	(132,391)	AFY
Excess Surface Water <sup>3</sup>	4,334,236	AFY
Total Available Surface Water <sup>3</sup>	17,336,943	AFY

<sup>(1)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area

<sup>(2)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area, otherwise gap was estimated to equal projected growth in groundwater demand

<sup>(3)</sup> Based on hydrologic analysis of major basins. Excess surface water and total available surface water may not be developed strictly within the planning region

# Southwest Region Overview



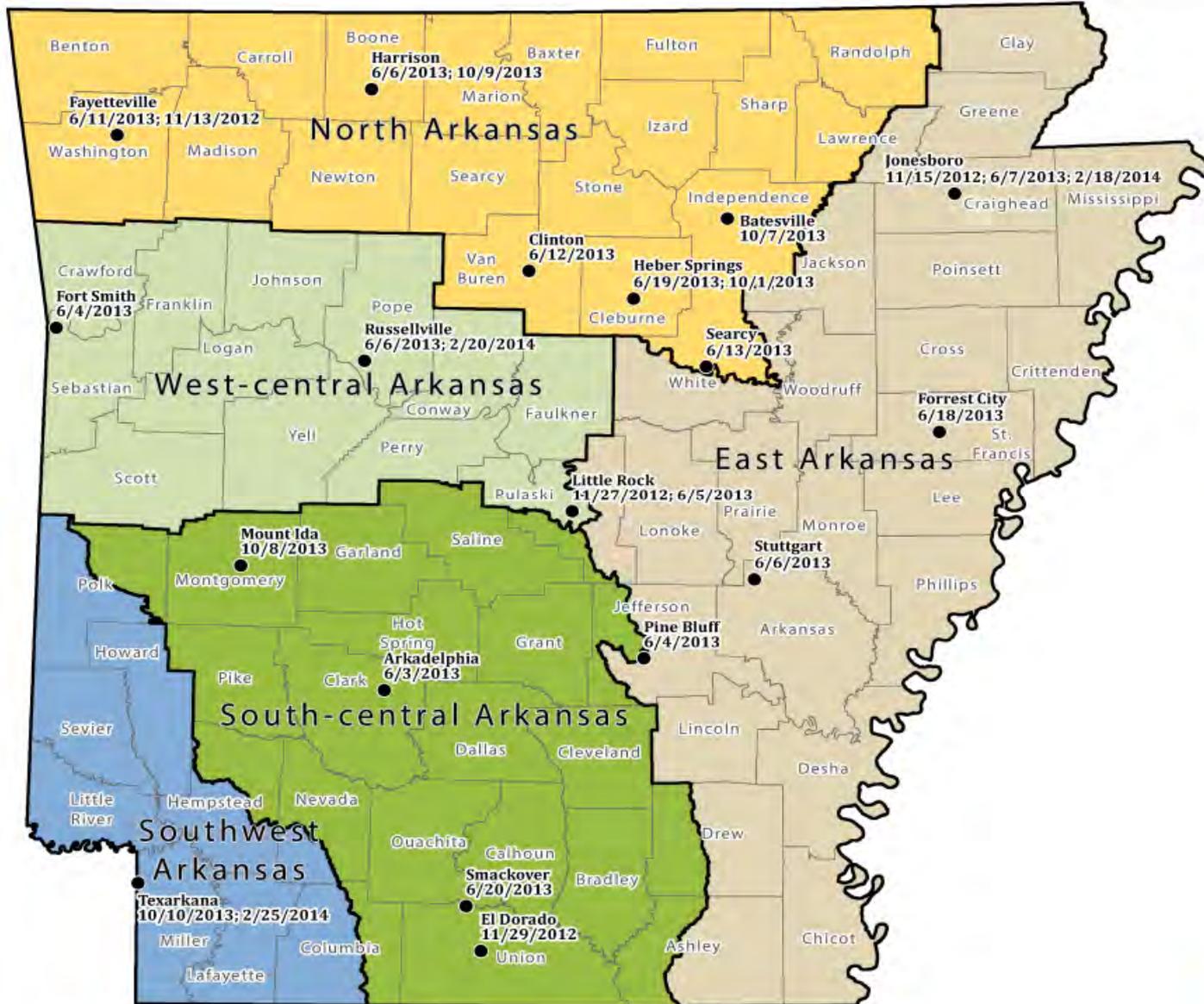
## REGIONAL STATISTICS

2050 Total Regional Demand	217,280	AFY
2050 Regional GW Availability <sup>1</sup>	3,642	AFY
2050 Regional GW Gap <sup>2</sup>	(70,219)	AFY
Excess Surface Water <sup>3</sup>	1,221,666	AFY
Total Available Surface Water <sup>3</sup>	4,816,548	AFY

<sup>(1)</sup> Based on dry climatic conditions and sustainably pumped aquifers for areas within MERAS model area

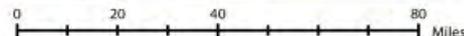
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<sup>(3)</sup> Based on hydrologic analysis of major basins. Excess surface water and total available surface water may not be developed strictly within the planning region



# Public Involvement

- Public Meeting Location
  - County Boundary
- Water Resources Planning Region**
- East Arkansas
  - North Arkansas
  - South-central Arkansas
  - Southwest Arkansas
  - West-central Arkansas



# Questions and Comments?

- Send comments
- Sign up for the newsletter
- **Stay involved!**



 **Arkansas Water Plan**  
Essential For Life

**ARKANSAS WATER PLAN EXECUTIVE SUMMARY**  
**PUBLIC REVIEW DRAFT COMMENTS**

*Thank you for taking the time to give us your comments. Please use as many sheets as necessary.*

Date: \_\_\_\_\_

Page Number: \_\_\_\_\_

Location on Page (e.g., column and paragraph, section number, figure number, or table number):  
\_\_\_\_\_

Comment:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Note: Suggestions of specific wording changes are most helpful for making this a better plan.*

Do you wish to be contacted about your comments? Yes  No

The following information is optional unless you would like to be contacted about your comments:

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone Number (optional): \_\_\_\_\_

Email: \_\_\_\_\_

**Return Comments To:**  
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