Arkansas Water Plan
2014 Update

"A comprehensive program for the orderly development and management of the state's water and related land resources."

Arkansas Code §15-22-503(a)

The Arkansas Water Plan – Why?

- To assess quality and quantity
- To be ready for growth, declines, and new challenges

Main Points

- Background
- Demands
- Issues
- Recommendations

Relevance

- Water is vital to prosperity and health
- Water must be managed in a sustainable manner to support economies, health, natural resources, and quality of life

Main Points

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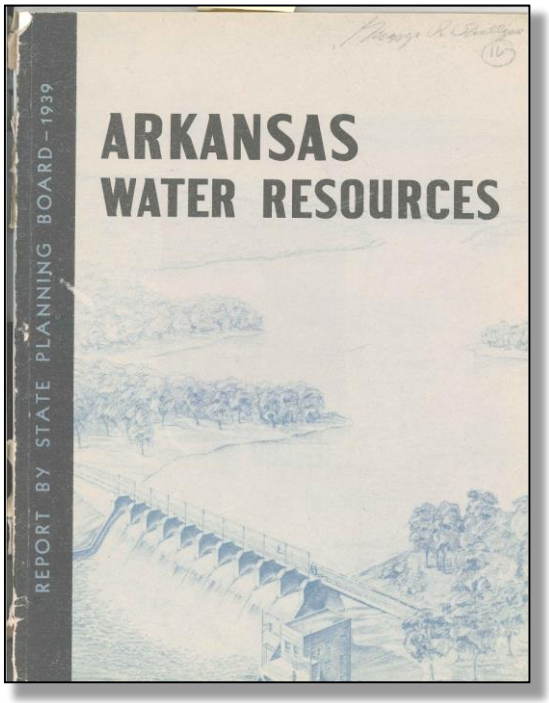
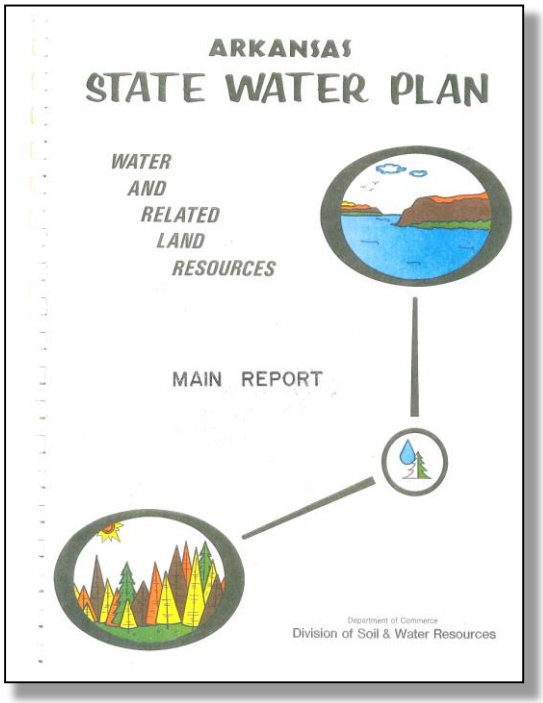
Water Planning- 1930s to the Present



1939



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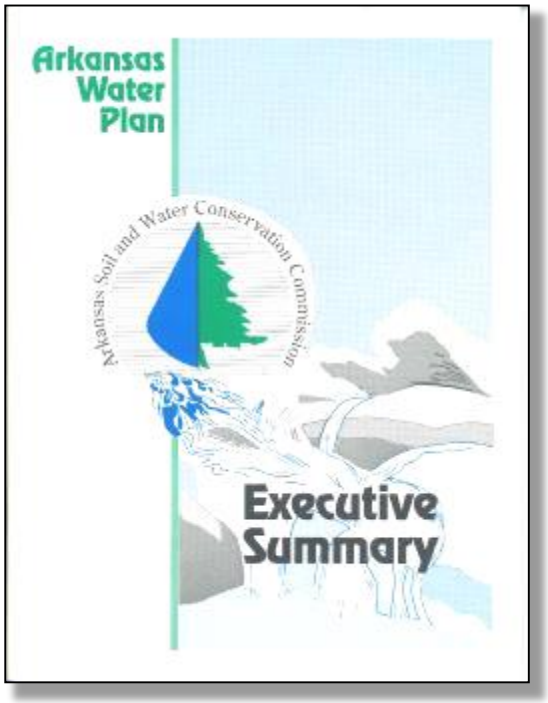


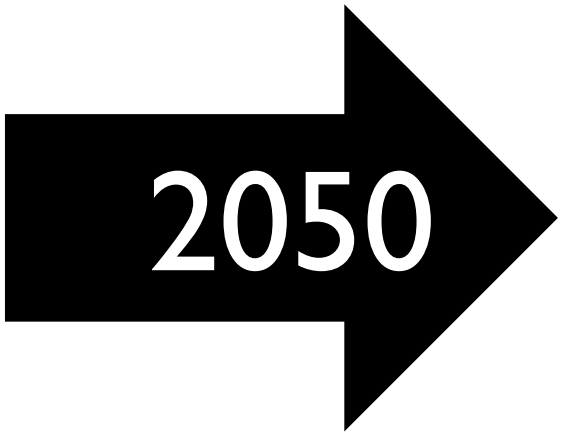
1990

2014 Update Participation

- Public participation by hundreds of people
- Volunteer workgroups beginning to end
- Approximately 250 meetings and presentations
- Rules approved in 2015

2014 Development Process

- **Demand** – how much needed, where, and when?
- **Supply** – how much available, where, and when?
- **Gaps** – the difference between demand and supply
- **Issues and Recommendations** –challenges and solutions



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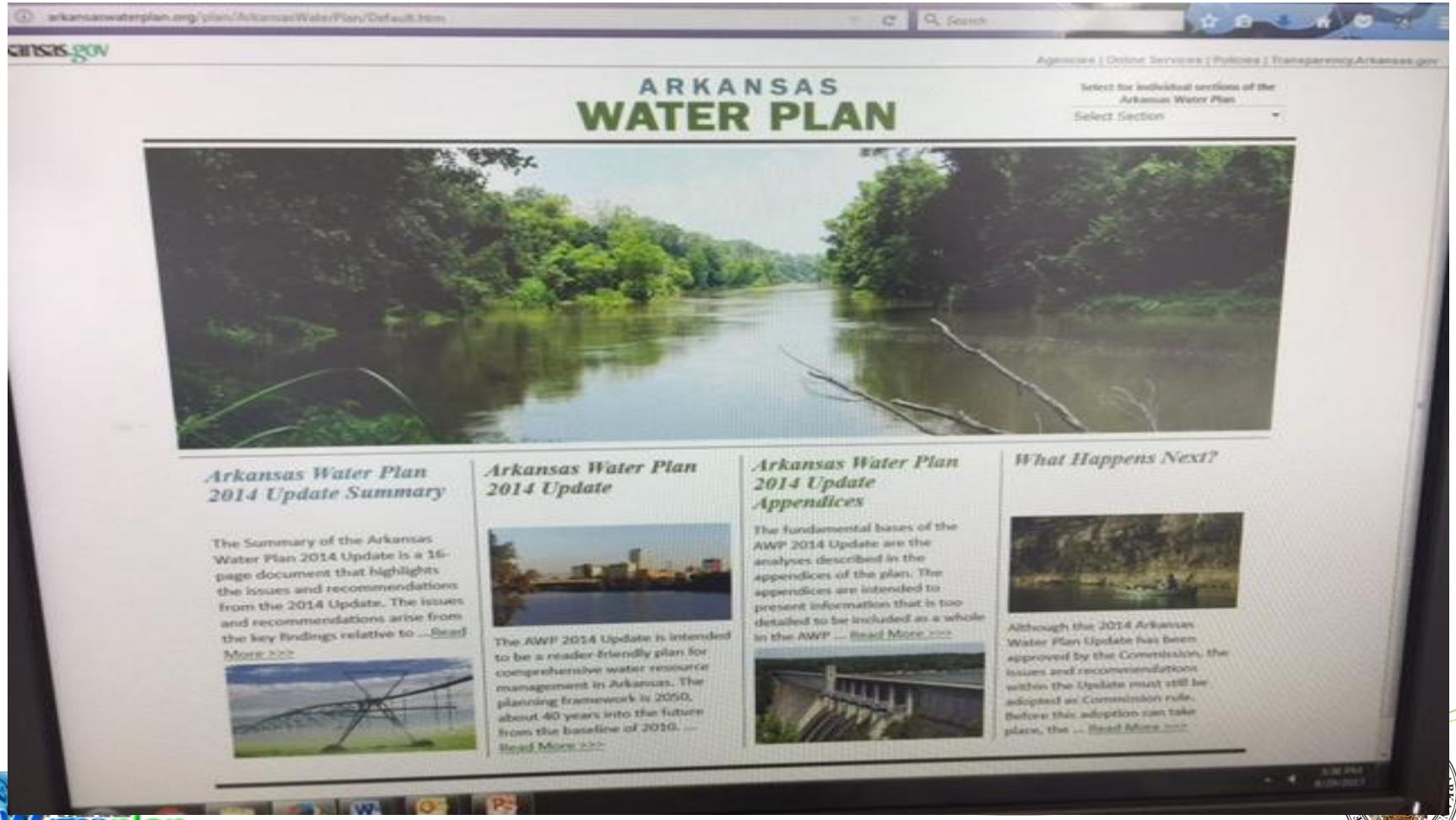

Main Points

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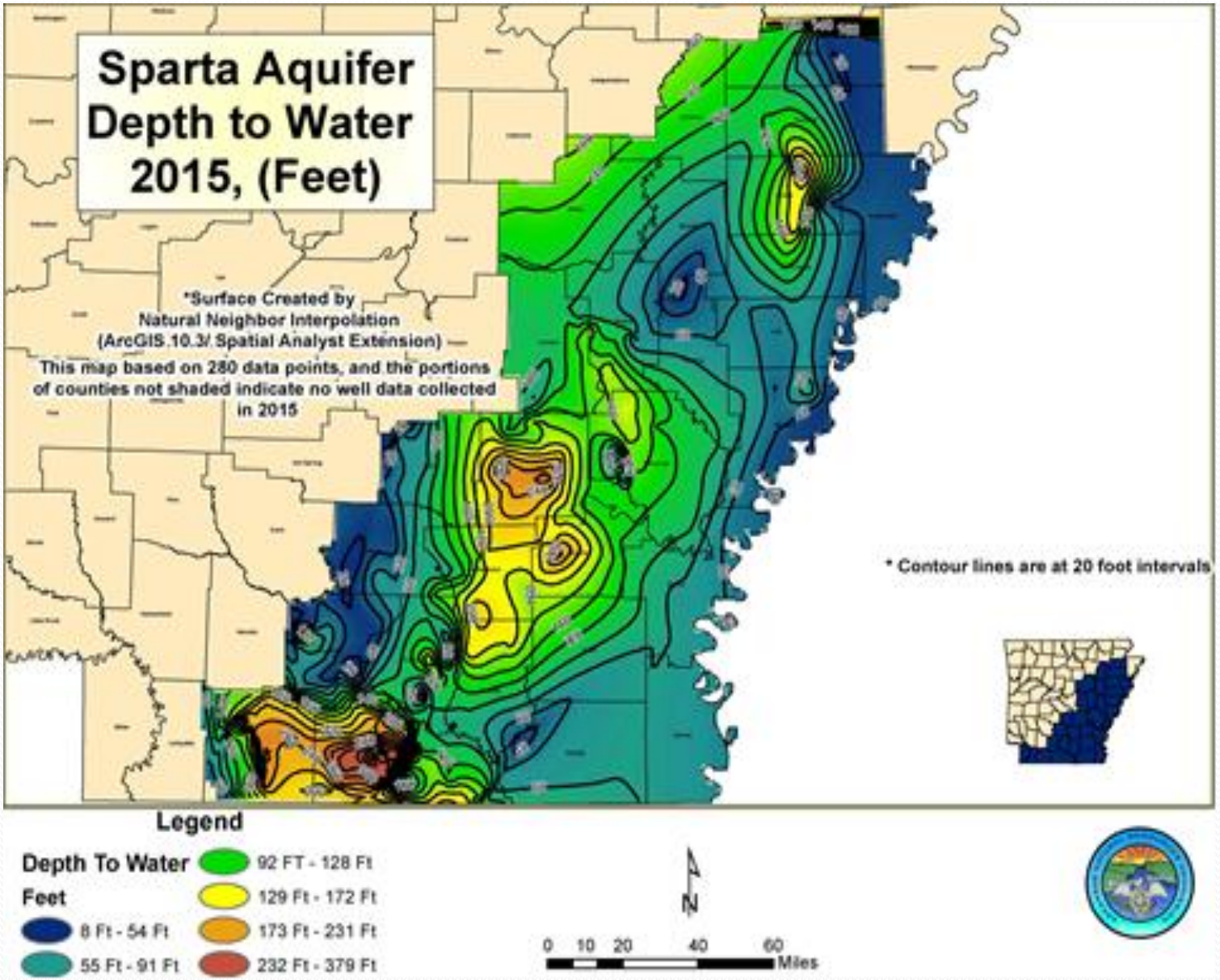
Demand Projections

- Current demand is 12.4 million acre-feet per year
  - 11 billion gallons per day
- Projected demand in 2050 - 14 million acre-ft. per year
  - Would cover the state in 4.9 inches of water
- Largest demands:
  - Crop irrigation 80%
  - Thermoelectric power 11%
  - Public drinking water 3.5%


Sparta Aquifer
Depth to Water
2015, (Feet)
*Surface Created by
Natural Neighbor Interpolation
(ArcGIS 10.3/ Spatial Analyst Extension) —
This map based on 280 data points, and the portions
of counties not shaded indicate no well data collected
in 2015
* Contour lines are at 20 foot intervals
Legend
Depth To Water
Feet
8 Ft - 54 Ft
55 Ft - 91 Ft
92 FT - 128 Ft
129 Ft - 172 Ft
173 Ft - 231 Ft
232 Ft - 379 Ft
N
0 10 20 40 60
Miles

Alluvial Aquifer Depth to Water 2015, (Feet)

Legend

DTW
Feet

- 1.37 Ft. to 17.16 Ft.
- 17.17 Ft. to 27.31 Ft.
- 27.32 Ft. to 37.45 Ft.
- 37.46 Ft. to 48.16 Ft.
- 48.17 Ft. to 61.13 Ft.
- 61.14 Ft. to 74.66 Ft.
- 74.67 Ft. to 88.75 Ft.
- 88.76 Ft. to 102.84 Ft.
- 102.85 Ft. to 117.50 Ft.
- 117.51 Ft. to 145.12 Ft.

*Surface Created by
Natural Neighbor Interpolation
(ArcGIS 10.3/ Spatial Analyst Extension)

This map based on 449 data points, and the portions of counties not shaded indicate no well data collected in 2015

N

0 12.5 25 50 75
Miles

Main Points

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Some BIG Issues from Past to Present

- Groundwater depletion
- Infrastructure construction, maintenance, and replacement
- Use of excess surface water
- Maintain and improve surface and groundwater quality

Other BIG Issues from Past to Present

- Red tape and confusion
- Low public awareness of water issues
- Finding voluntary, incentive-based alternatives to regulation
- Money to pay for it all

Main Points

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What's the plan?

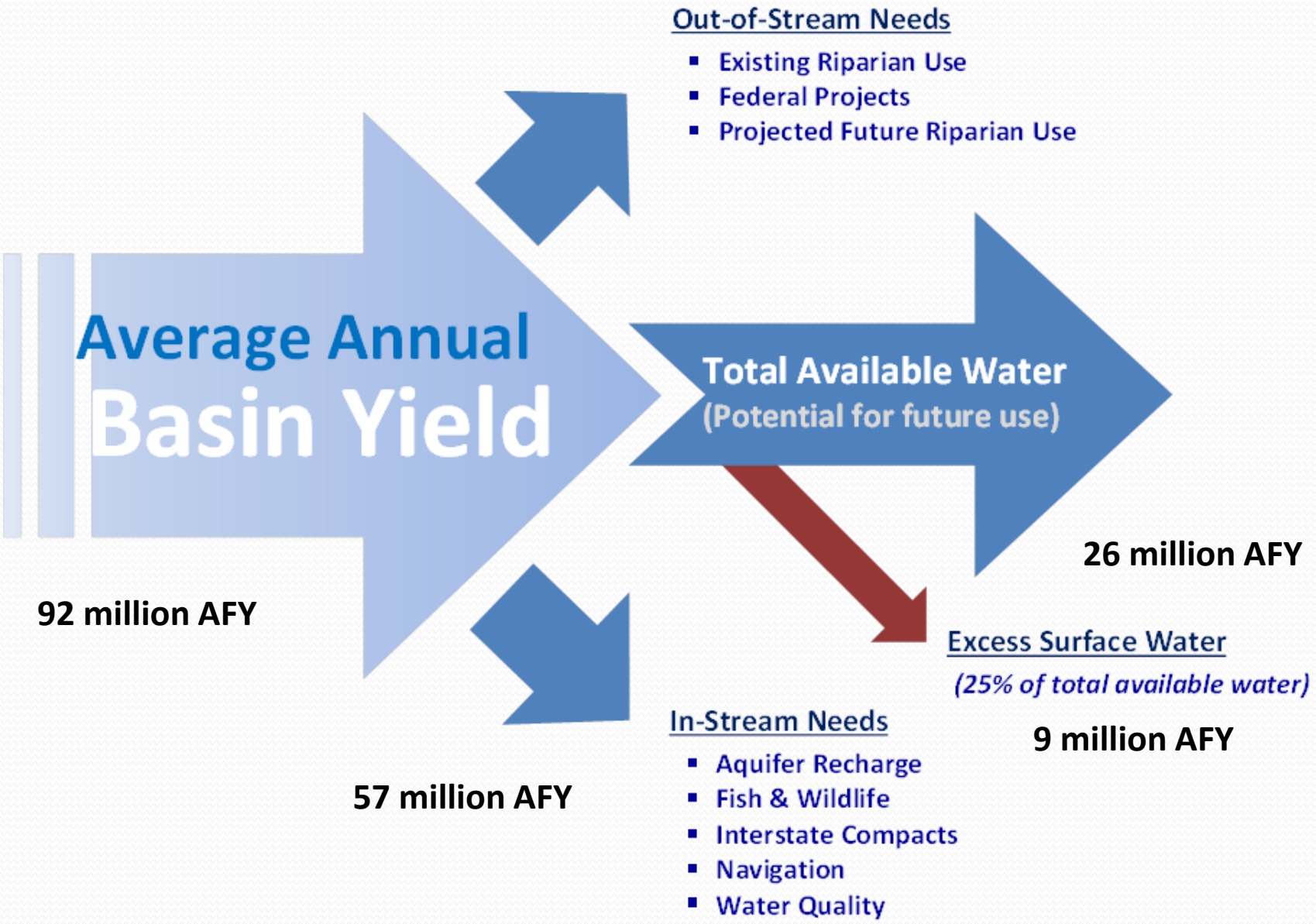
- Conserve
- Use mostly surface water
- Prepare for drought
- Educate

Irrigation Conservation

- Potential to reduce groundwater supply gap by 12 to 22%
- Significant public and private investment
- Still leaves nearly 80% of the supply gap

Surface Water Use

- Update directed ANRC to study 25% restriction on permitting diversions of excess surface water
- Construction of Bayou Meto and Grand Prairie Projects ongoing
- Overall encouragement of surface water use over groundwater use through all our tools and partnerships


Out-of-Stream Needs
Existing Riparian Use
Federal Projects
Projected Future Riparian Use
Average Annual
Basin Yield
92 million AFY
Total Available Water
(Potential for future use)
26 million AFY
Excess Surface Water
(25% of total available water)
9 million AFY
57 million AFY
In-Stream Needs
Aquifer Recharge
Fish & Wildlife
Interstate Compacts
Navigation
Water Quality

Nonpoint Source Pollution Management

- Discussion of requiring nutrient management plans statewide
- Four new EPA 9-element watershed management plans
  - Little River
  - Strawberry River
  - Cache River
  - Buffalo River
- NRCS cooperative agreements to put technicians in conservation district offices to assist with 319 projects and technicians in Northeast Arkansas to draft poultry litter management plans

Public Infrastructure

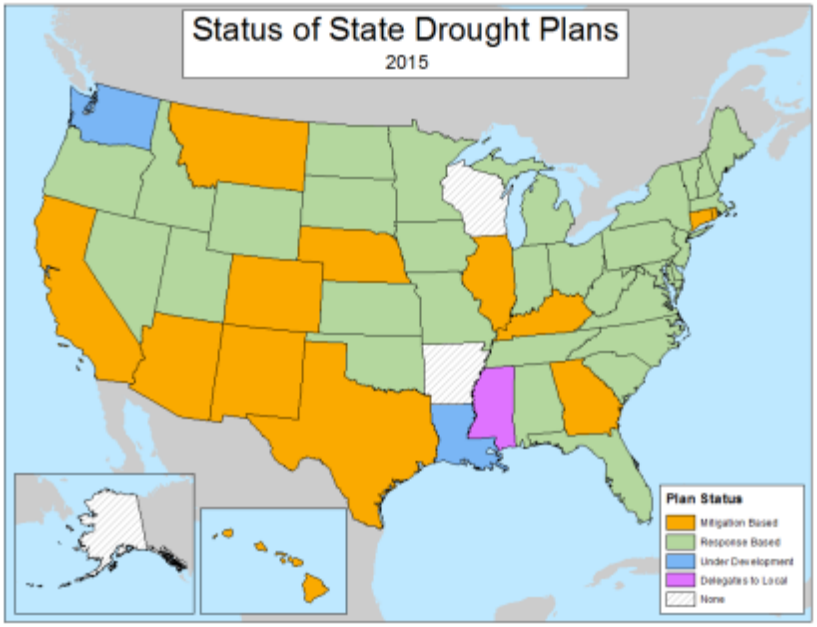
- Water resources development project financing
- Infrastructure condition
  - Drinking water need: $5.74 billion by 2024
  - Wastewater need: $3.76 billion by 2024
- Reallocation of storage in federal reservoirs

Infrastructure recommendations

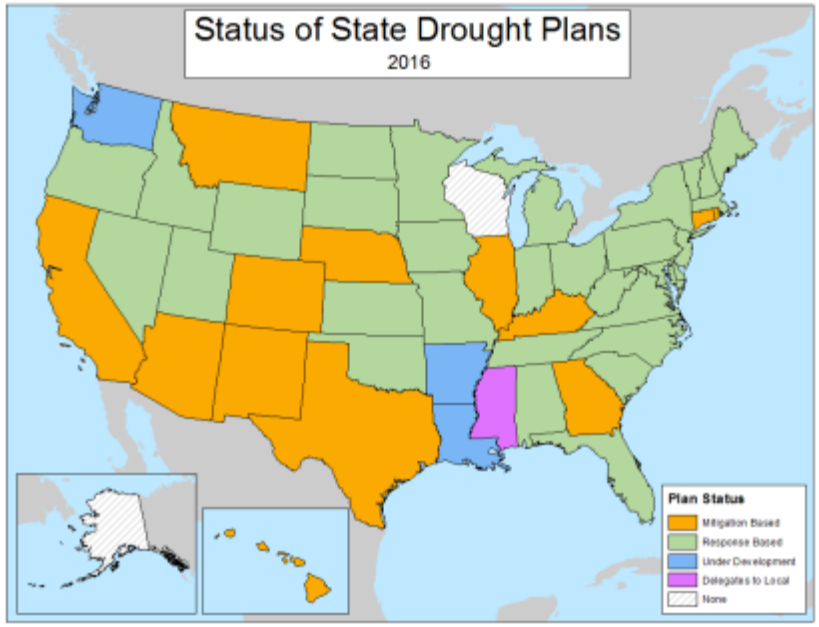
- Continue state general obligation bond program as a source of financing
- Motivate operators of water, wastewater, flood hazard mitigation, levee, and drainage projects to develop plans to maintain and replace infrastructure and to dedicate a portion of revenue to implement those plans
- Train boards overseeing public infrastructure and hold them accountable

Drought Contingency Response

We are working with the National Drought Mitigation Center and Southern Climate Impacts Planning Program to advise us on continuing the public involvement process from the Water Plan update to formulate a drought plan



Before the Water Plan update



After the Water Plan update

Information Gaps Identified

- Methods used for updated forecasts
- Water Use Reporting Program data quality
- “New” areas of groundwater depletion
- Groundwater model consistency and accuracy

Data and science

- Reviewed Water Use Reporting program and the associated database and are making improvements to increase accuracy
- Cost-sharing meter installation on alluvial wells in Critical Groundwater Areas with NRCS
- Increased data gathering due to collection from 65 new USGS meters on alluvial wells

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