

# Water for 2060

Governor's Water Conference

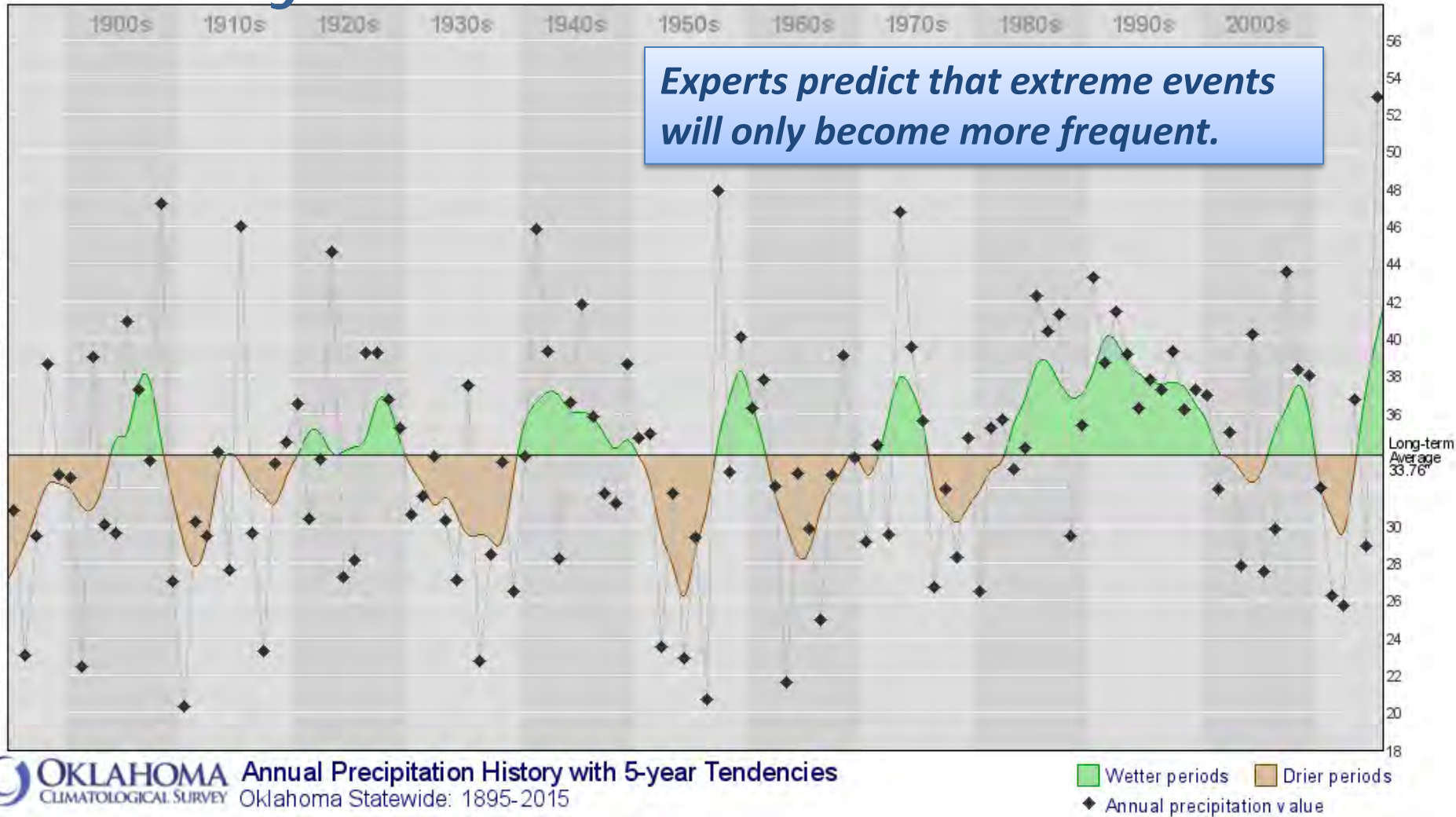
October 11, 2016

**J. D. Strong**

OWRB Executive Director



# History of Extremes

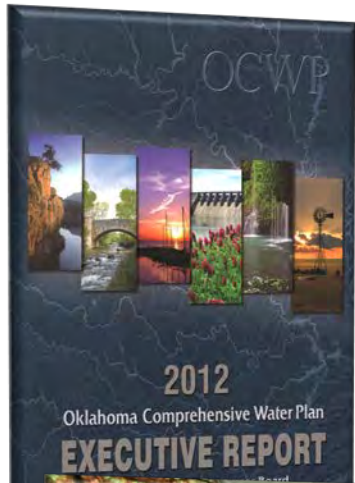


# Challenging Years Ahead

- **More climate extremes**
- **Increasing demands for water**
- **Aging/failing infrastructure**
- **Shrinking budgets (at least near term)**



# 2012 Update of the Oklahoma Comprehensive Water Plan

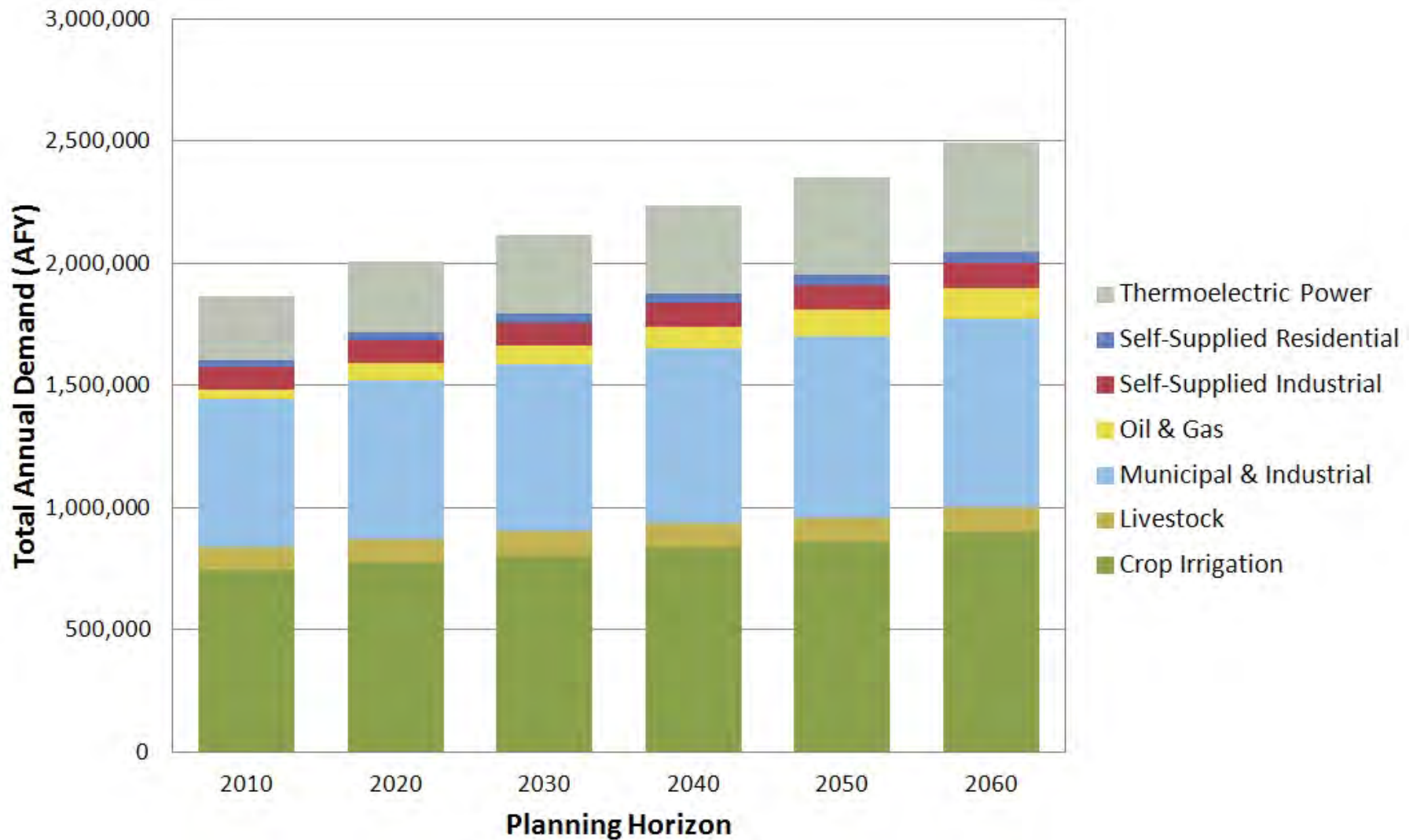


- Submitted to Governor and Legislature in 2012
- Most technically sound, extensively vetted Plan
- Executive Report & 13 Watershed Planning Region Reports

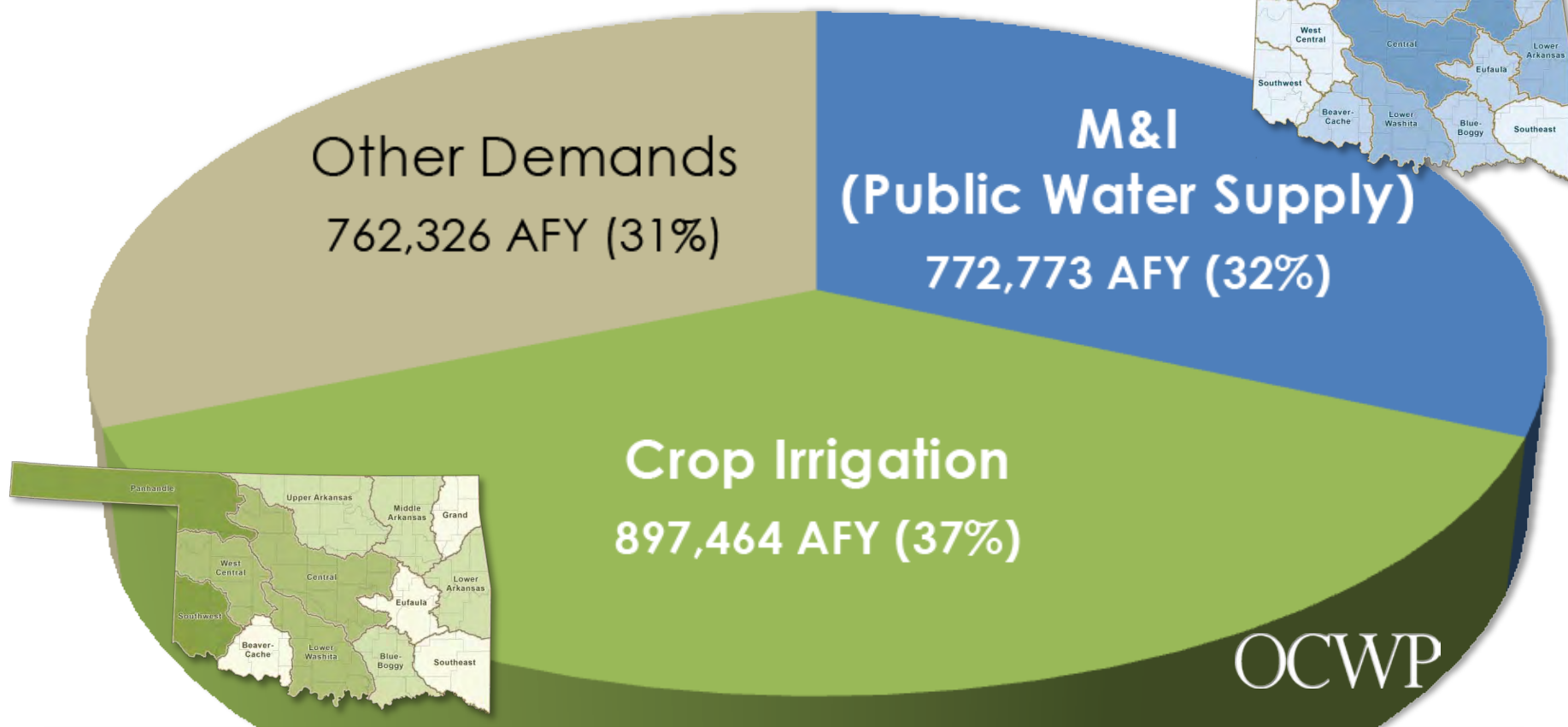


Overriding goal to provide safe, reliable water supplies to meet needs of all Oklahomans

# Total Water Demands (2010-2060)



# Total Water Demands (2060)



## Other Demands:

Thermoelectric Power - 450,227 AF (18%)

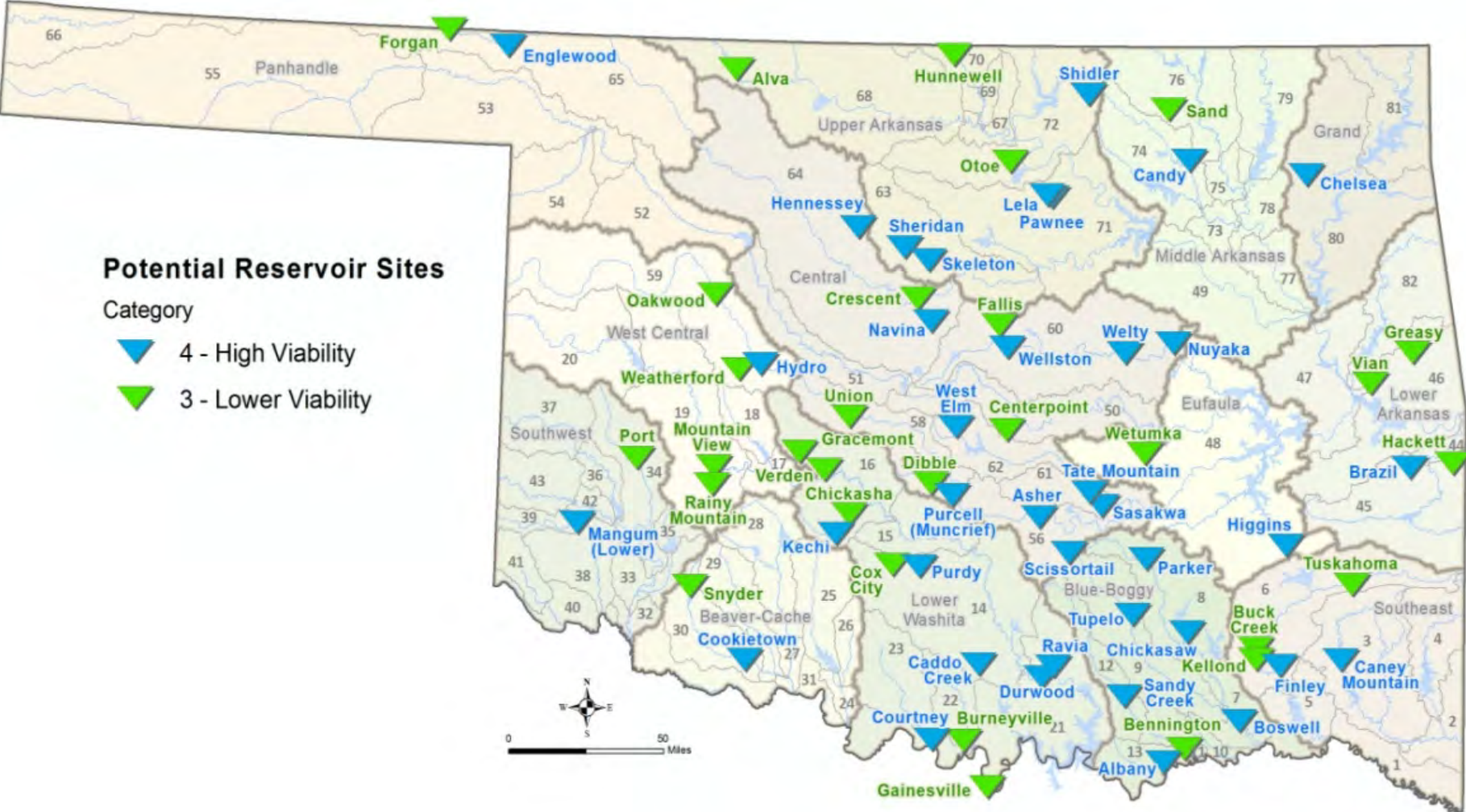
Oil & Gas - 115,570 AF (5%)

Livestock - 101,040 AF (4%)

Self-Supplied Industrial - 54,334 AF (2%)

Self-Supplied Residential - 41,155 AF (2%)

# New Reservoirs?



# Estimated Cost of New Reservoirs...

- 68 detailed studies for Potential new reservoirs
- Construction Costs: \$9 million to over \$1 billion
- Costs Dependable Yield \$500 to \$22,000 per AF

## Five Lowest Estimated Proposals by Total Cost

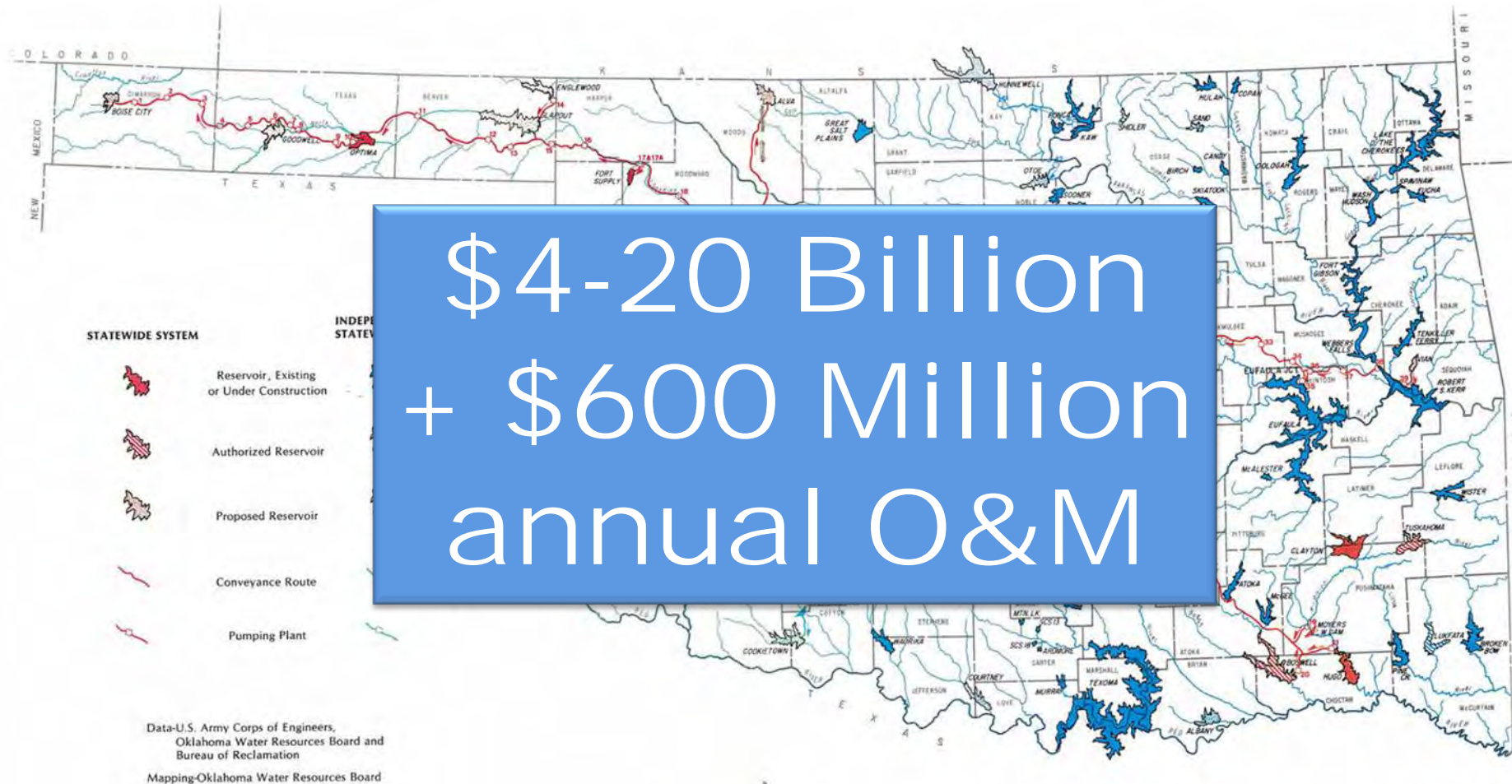
Reservoir Name	County	Dependable Yield	Conservation Pool Storage	Updated Cost Estimate 2010	Cost per AF Yield
		AF	AF		
Centerpoint Lake	Pottawatomie	700	3000	\$8,943,000	\$12,775.71
Muncrief Dam	McClain	20000	112000	\$28,757,000	\$1,437.85
Wellston Lake	Lincoln	7700	25000	\$54,023,000	\$7,015.97
Verden Reservoir	Caddo	5000	34000	\$56,222,000	\$11,244.40
Shidler Lake	Osage	16803	54920	\$58,264,000	\$3,467.48

## Five Lowest Estimated Proposals by Cost per A.F. Yield

Reservoir Name	County	Dependable Yield	Conservation Pool Storage	Updated Cost Estimate 2010	Cost per AF Yield
		AF	AF		
Caney Mountain Lake	Pushmataha	280055	384720	\$131,312,000	\$468.88
Durwood Reservoir	Johnston	232000	306000	\$166,429,000	\$717.37
Asher Lake	Pontotoc	400000	550000	\$373,610,000	\$934.03
Bennington Reservoir	Bryan County	179000	287420	\$180,662,000	\$1,009.28
Higgins Reservoir	Latimer	68000	190500	\$84,651,000	\$1,244.87



# East-West Conveyance?



# Smaller Out-of-Basin Water Transfers





Infrastructure Financing



Conservation, Reuse, Recycling



Monitoring



Supply Reliability



Fish & Recreation Flows



Excess/Surplus



State/Tribal Resolution



Regional Planning



**Infrastructure Financing**



**Conservation, Reuse, Recycling**



**Monitoring**



**Supply Reliability**



**Fish & Recreation Flows**



**Excess/Surplus**



**State/Tribal Resolution**



**Regional Planning**

# Conserve/Reuse/Recycle

## An Act

ENROLLED HOUSE  
BILL NO. 3055

By: Steele, Lockhart and Roan  
of the House  
and  
Fields of the Senate

An Act relating to waters and water rights; creating the Water for 2060 Act; providing short title; stating Legislative findings; stating goal for water consumption by certain year; amending 82 O.S. 2011, Section 1088.1, which relates to the Oklahoma Water Conservation Grant Program; modifying name of act; adding rural water districts to act; authorizing certain water reuse projects; creating the Water for 2060 Advisory Council; stating membership and providing for appointments; requiring Executive Director of the Oklahoma Water Resources Board to serve as chair; providing for quorum, membership vacancies and administrative support for Advisory

**WATER FOR 2060**  
EFFICIENCY · CONSERVATION · RECYCLING · REUSE



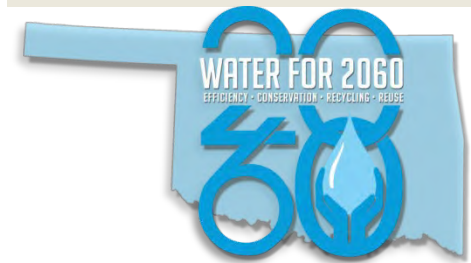
# The Cheapest Source of Water...



“Oklahoma is truly unique in setting such an ambitious goal for water efficiency, conservation, recycling and reuse... There is no doubt that **it will take each and every one of us working together** to become the nation’s most water-efficient state.”

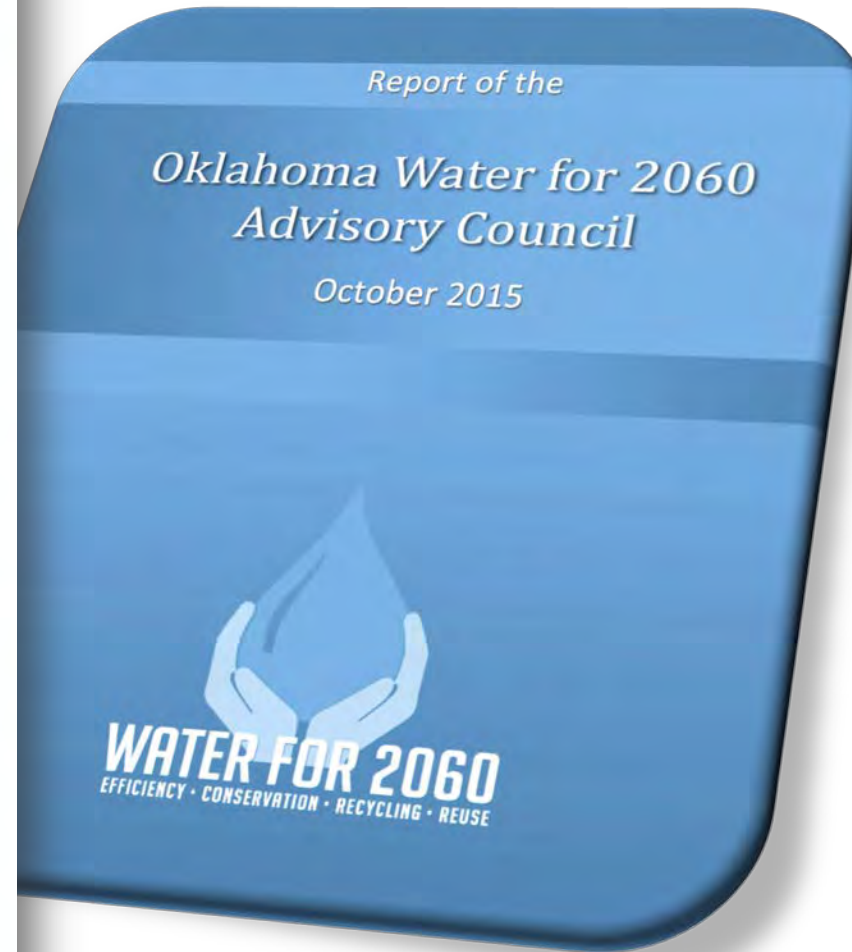
~ Governor Mary Fallin

# Final Report Submitted!



## Water for 2060 Advisory Council Recommendations

<b>All Water Use Sectors (A)</b>	A-1 Develop public education and outreach materials, a statewide resources conservation campaign, and an Oklahoma water efficiency portal.
<b>Public Water Supply (PWS)</b>	<p>PWS-1 Develop an Oklahoma public water supply system water efficiency best practices guide.</p> <p>PWS-2 Develop a state recognition and rewards program for highly efficient public water supply systems.</p> <p>PWS-3 Develop an Oklahoma water system loss reduction best practices guide.</p> <p>PWS-4 Provide state funding and financing for water system loss reduction.</p> <p>PWS-5 Encourage regionalization and supply sharing.</p>
<b>Crop Irrigation (CI)</b>	<p>CI-1 Apply state financing programs to water-efficient crop irrigation equipment conversion and practices.</p> <p>CI-2 Develop an Oklahoma crop irrigation best practices guide.</p> <p>CI-3 Actively support federal crop insurance reform.</p>
<b>Energy &amp; Industry (EI)</b>	<p>EI-1 Facilitate increased sharing of information and supplies between energy and industry water users.</p> <p>EI-2 Develop an energy and industry water use best practices guidance and recognition program.</p> <p>EI-2 Promote industrial use of marginal quality waters.</p>



# Education & Outreach Campaigns

Squeeze Every Drop

FOLLOW US



SIGN UP TO RECEIVE OUR NEWSLETTER

- HOME
- SAVING WATER OUTDOORS
- SAVING WATER INDOORS
- WORKSHOPS AND EVENTS
- ASK THE EXPERTS
- WATER CONSERVATION PROGRAM
- CONSUMER CONFIDENCE REPORT
- CONTACT



Dewey says, "Adjust your sprinkler system to the change of the season. Plants need a lot less water in the fall and winter."

Fall tips to save even more.

WATER CONSERVATION NEWS

DROUGHT MONITOR

HOW TO VIDEOS

WATERING DURING FREEZING TEMPERATURES COULD RESULT IN A FINE

Even though it's cold outside doesn't mean it's alright to forget about water...

[READ MORE](#)

POSTED 11/19/2015

FALL IS IN THE AIR BUT LEAVES ARE ON THE GROUND

Now that Oklahoma is experiencing cool, crisp mornings, warm, sunny days and...

[READ MORE](#)

POSTED 11/12/2015

[MORE NEWS](#)

IRRIGATION PLANNER

UPCOMING EVENTS

COMBINED LAKE CAPACITY

Save Our Water



The California lifestyle

English | Español

Agency & Business Toolkit



What You Should Know  
Drought Facts



What You Can Do  
Ways to Save



What's New  
In the News







SAVING TOGETHER  
WITH A SELFIE

Find Out How



# Recognition/Incentive Programs



Mark	What It Means
<b>Label</b> 	Identifies a water-efficient product that has been independently tested and certified to meet EPA WaterSense criteria for efficiency and performance.
<b>Promotional Label</b> 	Advertises the availability of WaterSense labeled products and encourages consumers to look for them. Shows consumers what the WaterSense label looks like.
<b>Partner Logo</b> 	Signifies an organization's commitment to promoting water efficiency, demonstrated by a signed partnership agreement between that organization and EPA.
<b>Promotional Logo</b> 	Promotes the WaterSense program in materials when talking about WaterSense in general or educating the public about the program.

SOUTHERN NEVADA WATER AUTHORITY  
A NOT-FOR-PROFIT WATER AGENCY

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Coupons Landscape Rebate


**Multimedia**

**Video: Conservation Programs**




Learn how SNWA makes saving water easier with water conservation programs. [Play](#)

**Photos: Drip Irrigation Tips**



Save water by learning how to optimize your drip system. [See](#)

**Finding Leaks**



Learn how to find leaks inside and outside your home. [Launch](#)

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**Pool Cover Coupons**

Did you know a pool cover can save thousands of gallons of water each year by reducing evaporation? Purchase one today using SNWA's instant rebate coupon. [More](#)

**Smart Irrigation Clock Rebate**

A smart irrigation controller will help you save water by automatically adjusting the watering schedule according to the weather. SNWA offers a rebate coupon for smart controllers. [More](#)


**Rain Sensor Rebate**

You may know that turning off your irrigation system on rainy days saves water, but who remembers to do it? Use our instant rebate coupon to purchase a rain sensor, and you'll have one less thing to worry about. [More](#)

**Get Cash for Your Grass**

The Water Authority will rebate customers up to \$2 per square foot of grass removed and replaced with water-efficient landscaping. [Get your Water Smart Landscapes Rebate](#)

**Landscaping Pays**



**Get more cash for your grass**

There's never been a better time to upgrade your landscape! Take advantage of an increased incentive for the Water Smart Landscapes Rebate Program and receive up to \$2 for every square foot of grass removed and replaced with water-efficient landscaping. [Learn More](#)

**Landscaping Resources**

Use our worksheets and tips to help you convert your grass to a water efficient landscape.

- [Preconversion Resources](#)
- [Post Conversion Resources](#)

**Getting Started**

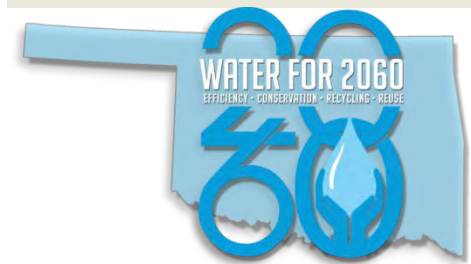
- [Plant Coverage Worksheet](#)
- [Water Smart Landscapes Program Plant List](#)
- [Plant Search](#)
- [Professional Landscape Designs](#)

**Keeping It Healthy**

- [The First Few Months](#)
- [New Landscape Maintenance](#)
- [One Year Anniversary - Summer](#)

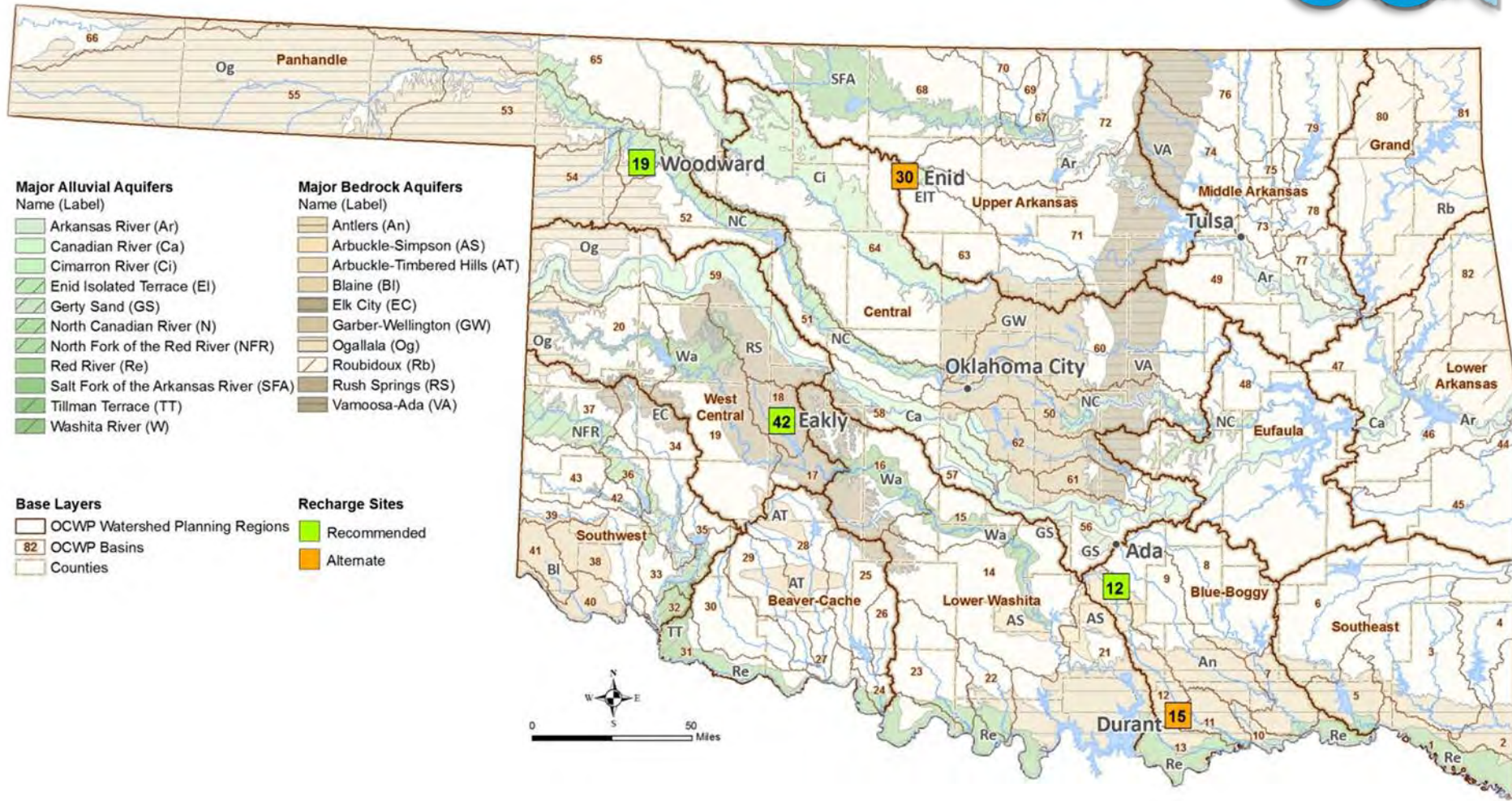


# Marginal Quality Water



**Basins with Greatest Potential to Offset Fresh Water Use with MQ Water**

# Aquifer Storage & Recovery



- Major Alluvial Aquifers**  
Name (Label)
- Arkansas River (Ar)
  - Canadian River (Ca)
  - Cimarron River (Ci)
  - Enid Isolated Terrace (EI)
  - Gerty Sand (GS)
  - North Canadian River (N)
  - North Fork of the Red River (NFR)
  - Red River (Re)
  - Salt Fork of the Arkansas River (SFA)
  - Tillman Terrace (TT)
  - Washita River (W)
- Major Bedrock Aquifers**  
Name (Label)
- Antlers (An)
  - Arbuckle-Simpson (AS)
  - Arbuckle-Timbered Hills (AT)
  - Blaine (BI)
  - Elk City (EC)
  - Garber-Wellington (GW)
  - Ogallala (Og)
  - Roubidoux (Rb)
  - Rush Springs (RS)
  - Vamoosa-Ada (VA)

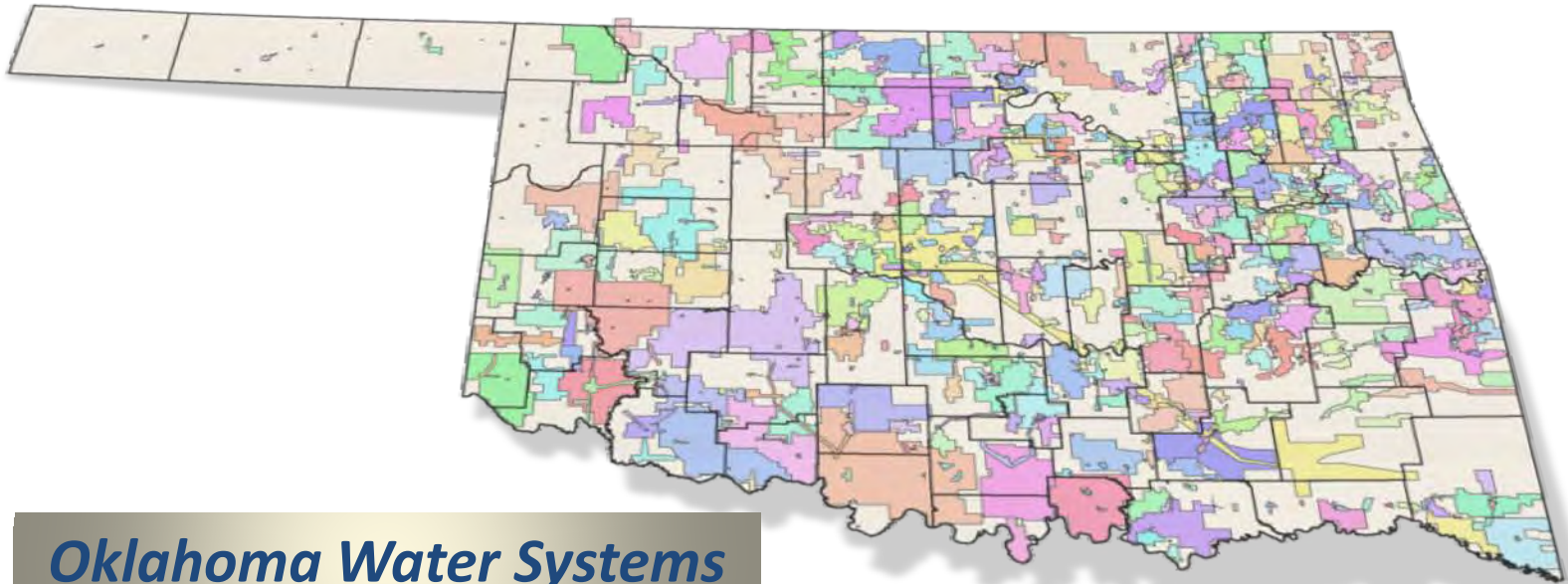
- Base Layers**
- OCWP Watershed Planning Regions
  - OCWP Basins
  - Counties
- Recharge Sites**
- Recommended
  - Alternate



# Regionalization

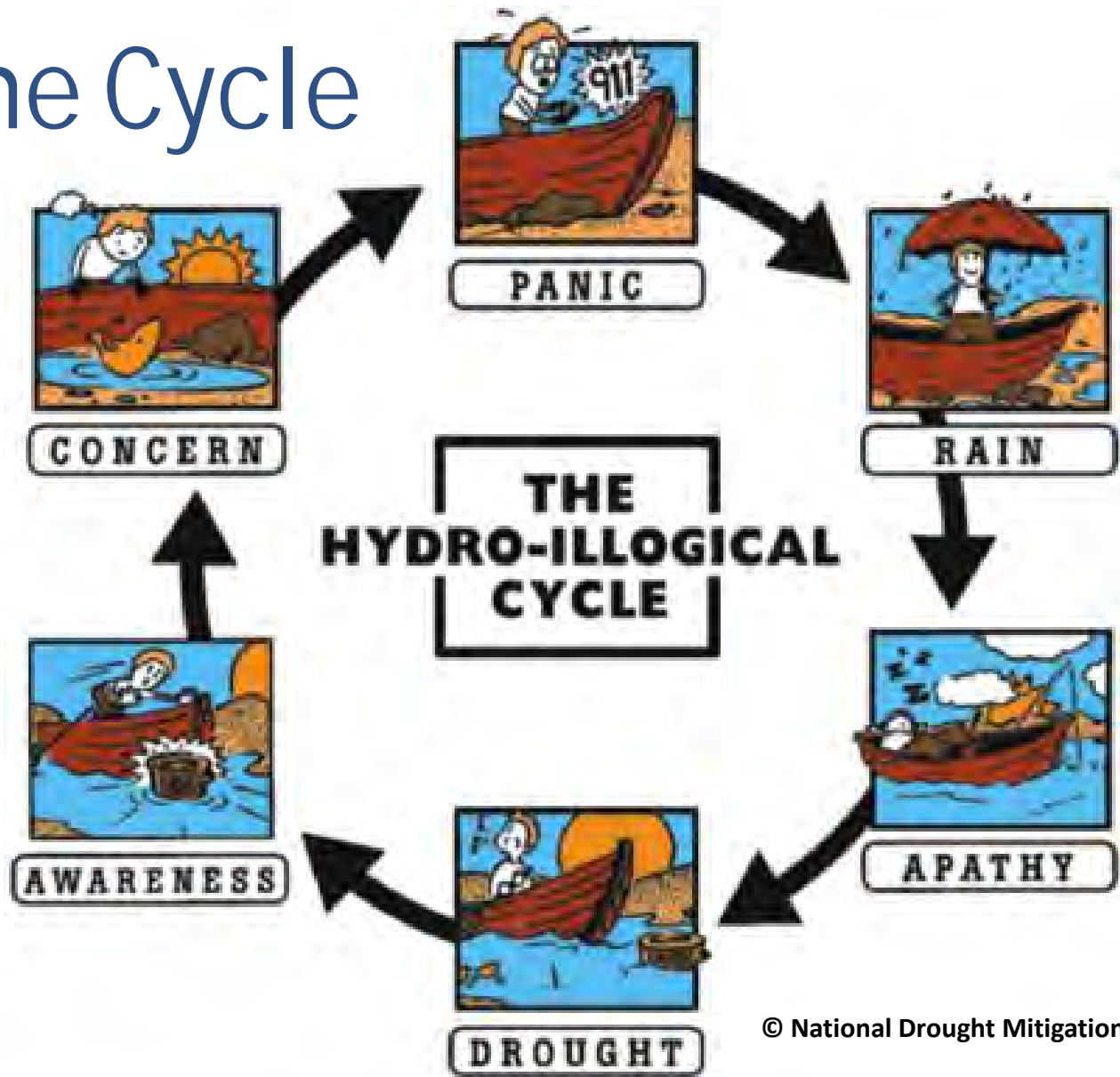


- Oklahoma has ~700 water systems serving less than 1,000 customers
- Economy of scale benefits; systems with multiple sources more resistant to drought



*Oklahoma Water Systems*

# Break the Cycle



© National Drought Mitigation Center

# Thank You!

**J.D. Strong**

Executive Director

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**OWRB**  
the water agency