Water Planning & Water Rights Administration in Oklahoma

Association of Western State Engineers

September 29-October 1, 2014

Julie Cunningham

Chief, Planning & Management Division

State of Oklahoma
OWRB
WATER RESOURCES BOARD
the water agency

OWRB Mission

To enhance the quality of life for Oklahomans by managing, protecting, and improving the state's water resources to ensure clean, safe, and reliable water supplies, a strong economy, and a healthy environment

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Planning & Management Division

Long-term water planning & technical studies	• Oklahoma Comprehensive Water Plan (2012)
Water rights permitting & administration	• 12,000 permits allocating 6 million acre-feet of stream and groundwater
Interstate stream compact administration	• 4 compacts with neighboring states
Floodplain management	• Intelligent land use planning
Dam safety	• Ensure safety at approximately 4,500 dams
Well drillers licensing	• Ensure well construction standards • Database of 35,000 water well logs

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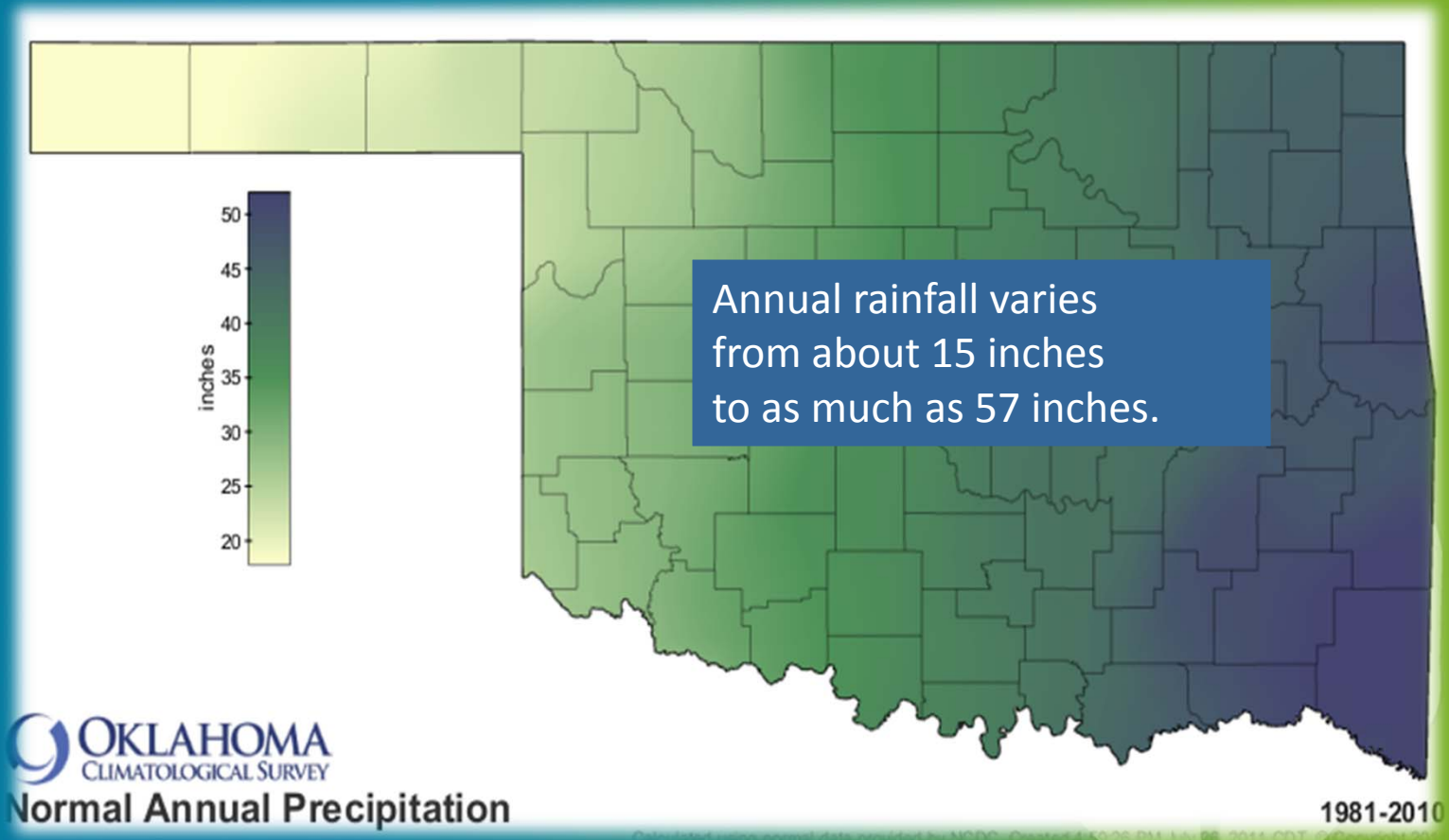
Oklahoma's Water Resources



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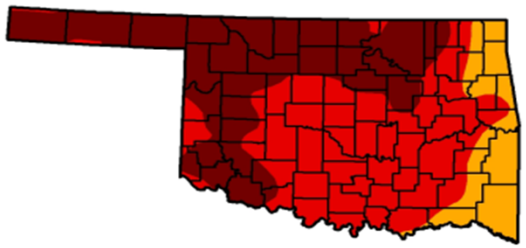
US Drought Monitor

OKLAHOMA CLIMATOLOGICAL SURVEY

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
	0.00	100.00	100.00	100.00	86.80	41.64
k (map)	0.00	100.00	100.00	100.00	87.00	39.58
go (map)	0.00	100.00	100.00	99.56	71.86	32.28
ear (map)	0.00	100.00	100.00	100.00	94.89	37.06
r (map)	0.00	100.00	100.00	99.98	95.33	42.09
go (map)	24.91	75.09	66.53	41.79	19.03	3.78



sity:

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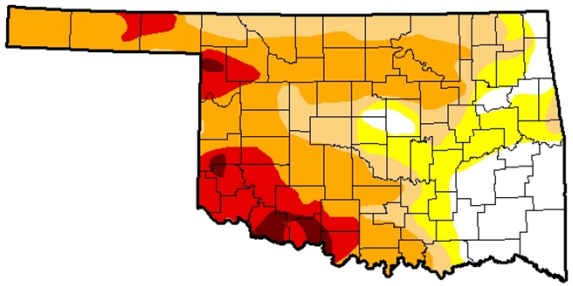
summary

USDA

Released Thursday, February 21, 2013
Brian Fuchs, National Drought Mitigation Center



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	17.17	82.83	69.10	49.31	13.59	2.25
Last Week 9/16/2014	18.23	81.77	67.91	42.99	11.87	2.25
3 Months Ago 6/24/2014	9.08	90.92	78.40	65.61	40.57	10.69
Start of Calendar Year 12/31/2013	50.84	49.16	38.17	18.99	4.84	2.40
Start of Water Year 10/1/2013	21.74	78.26	43.00	17.62	4.42	1.45
One Year Ago 9/24/2013	7.91	92.09	49.13	20.80	4.34	1.46

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Heim
NCDC/NOAA

USDA

http://droughtmonitor.unl.edu/

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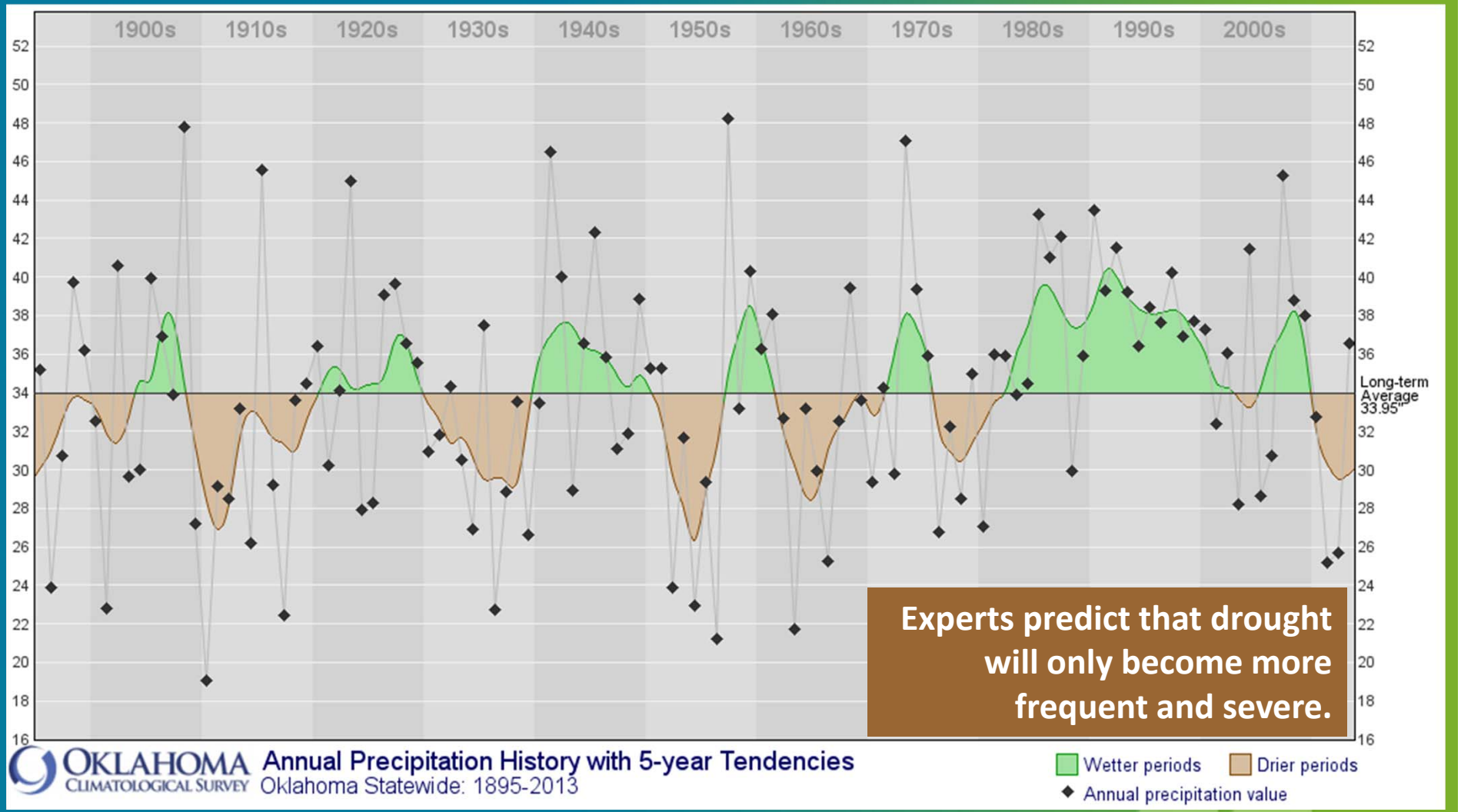
Oklahoma's Precipitation History (1895-2013)



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Goals of the 2012 Oklahoma Comprehensive Water Plan Update

1. Characterize **demands** by water use sector.
2. Identify **reliable supplies** to meet forecasted demands.
3. Perform **technical studies** to evaluate emerging water management issues.
4. Comprehensive **stakeholder engagement** to make recommendations regarding the management of Oklahoma's water resources.
5. Ensure water resources management programs that **create reliability**.
6. Make **"implementable" recommendations** based upon technical evaluations and stakeholder input.

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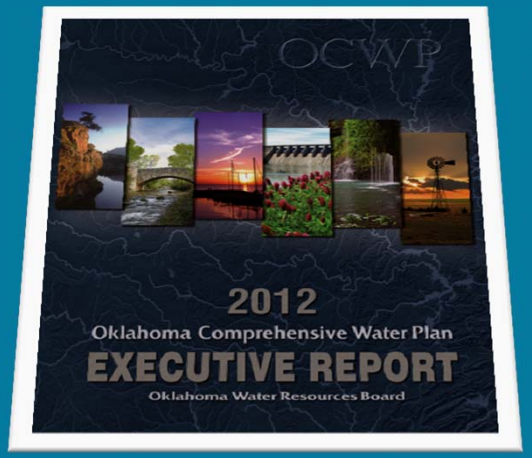
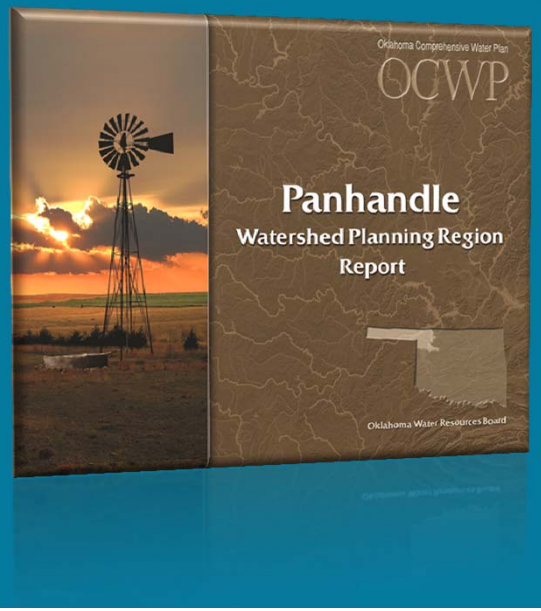
2012 Update of the Oklahoma Comprehensive Water Plan





Most complex analyses in state history.

Executive Report:

- Synthesis of OCWP technical studies and results
- Water policy recommendations

13 Watershed Planning Region Reports:

- Results of OCWP technical analyses, including options to address identified water shortages

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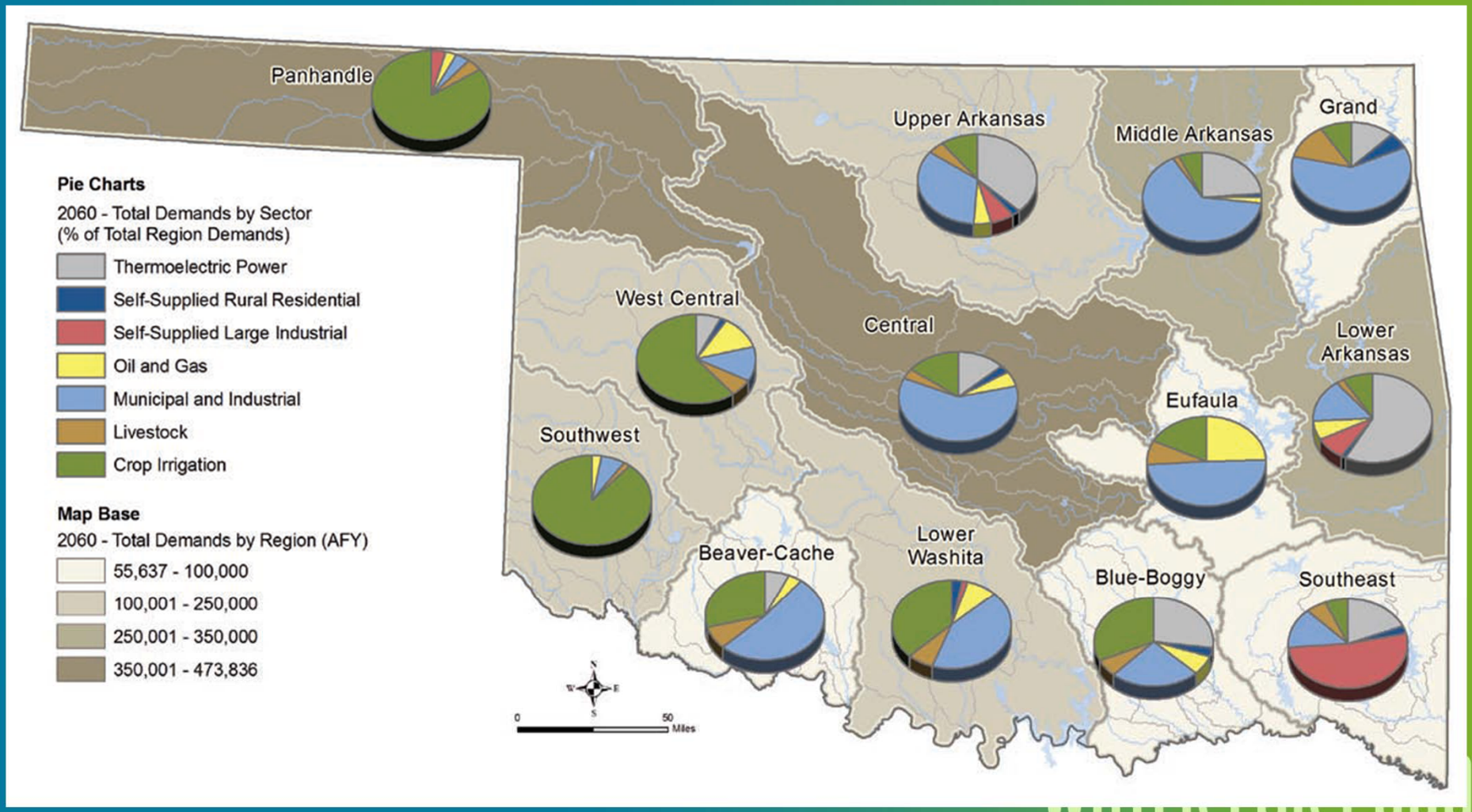
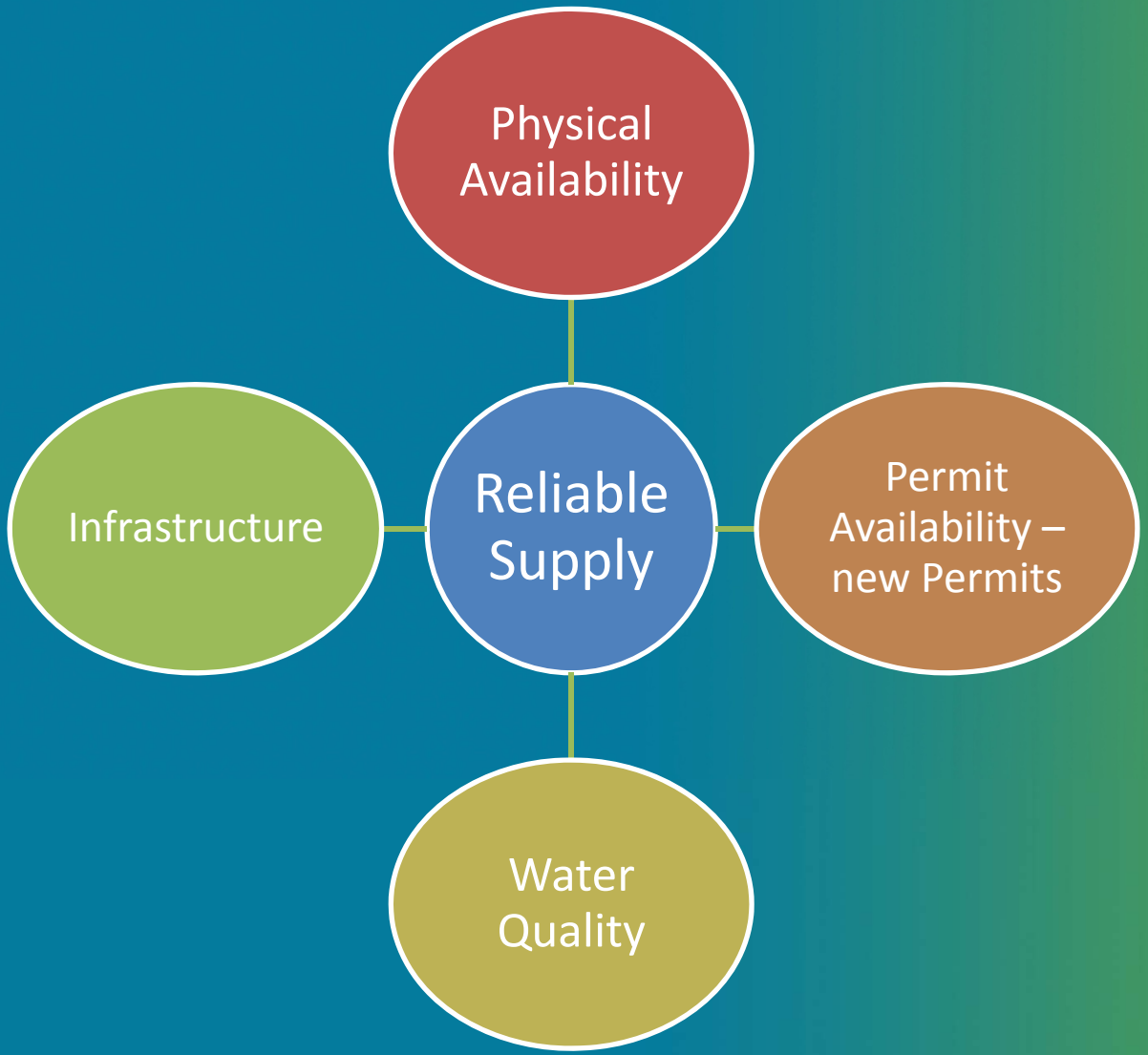
Demand Projections



Projecting Water Availability



OWCP - "Big 8" Priority Recommendations

- Infrastructure Financing
- Conservation, Reuse, Recycling
- Water Monitoring: Quality and Quantity
- Supply Reliability
- Instream Flows
- Excess/Surplus
- State/Tribal Resolution
- Regional Planning

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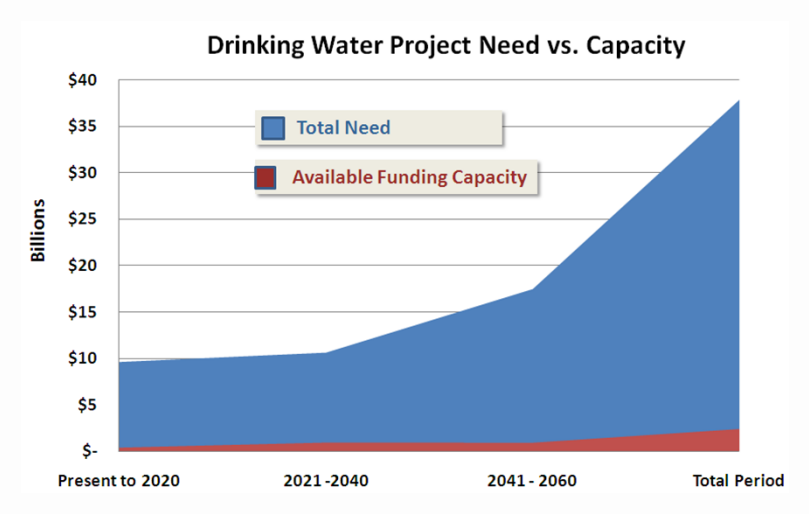
OCWP Priority Recommendation

Water Infrastructure Funding:

- **Address Oklahoma's projected $82+ billion water and wastewater infrastructure need by 2060.**
- **OWRB's 5 successful ("AAA") grant & loan programs can only satisfy 4-9% of this need.**



SQ 764 (57%Y - 43%N): Water Infrastructure Credit Enhancement Reserve Fund

Over $3 billion in loan and grants to date. Savings over of $1 billion.

Specifically address the needs of small-to-medium communities.

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OCWP Priority Recommendation

Water Quality & Quantity Monitoring:

- **Better data for improved decision-making.**
- **Restore funding for statewide water quality and quantity monitoring program.**
- **Create the first comprehensive groundwater monitoring program.**

$1.5 Million appropriation for enhanced, permanent statewide GW/SW monitoring network.

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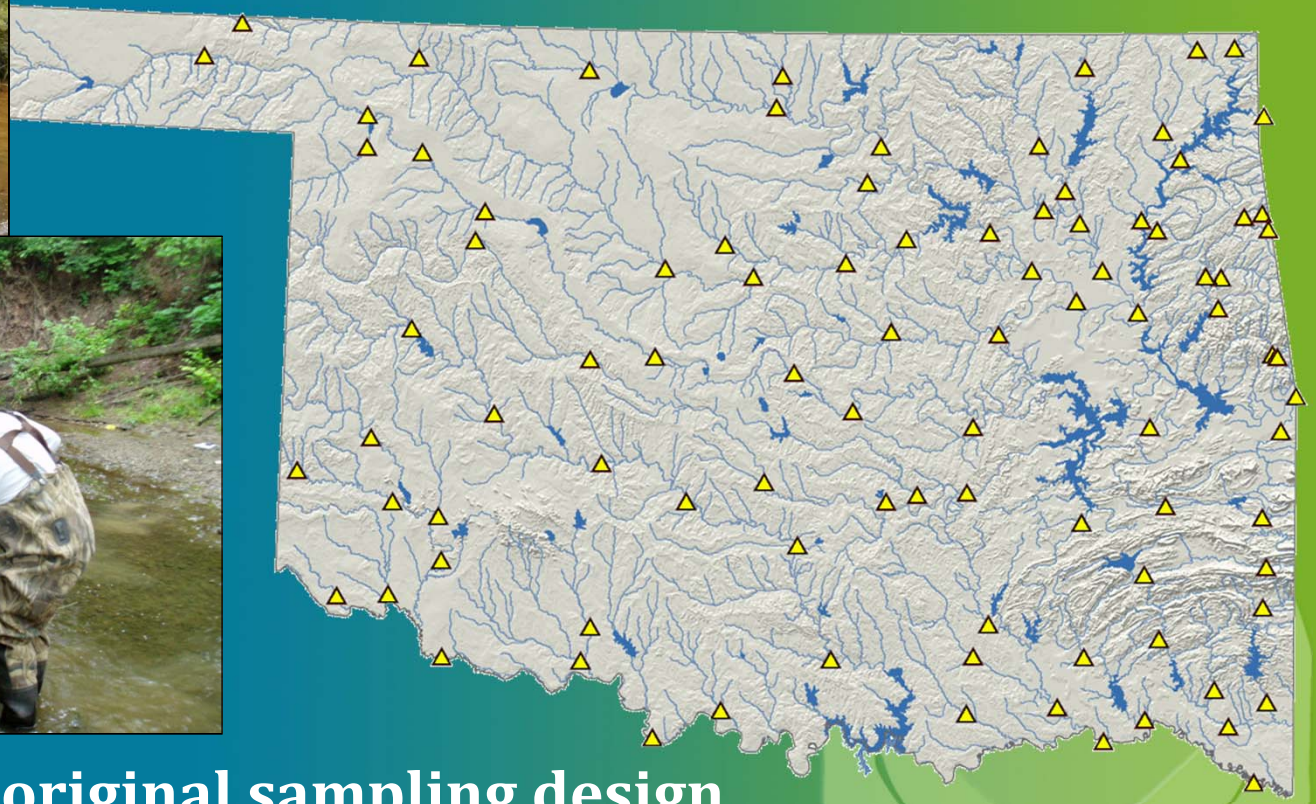
Stream Monitoring Upgrades



- Similar to the original sampling design
- 103 Sites statewide
- 5 – 10 New stream gages
- More frequent site visits
- More parameters sampled

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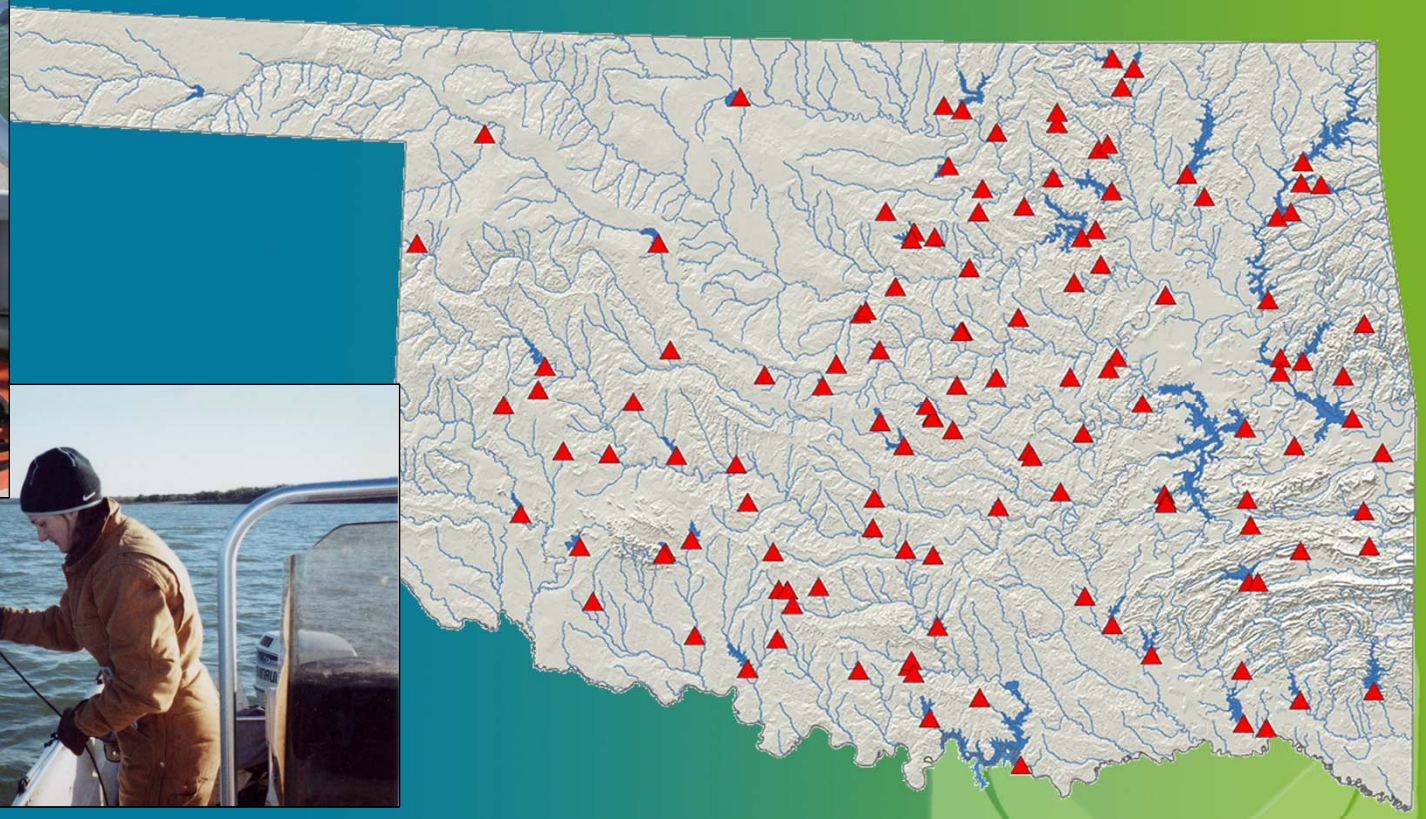
Lake Monitoring Upgrades



- Similar to the original sampling design
- ~130 Lakes sampled statewide
- More frequent site visits
- More parameters sampled

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OCWP Priority Recommendation

Water Supply Reliability

- **Ensure water availability for future growth through fair and sustainable water allocation.**
  - **Surface and groundwater yield and allocation studies**
  - **Permitting policy analysis: GW-SW interactions, seasonal permitting, storage yield protection "triggers", conservation-oriented permitting approaches**
- **$1.3 M/yr Gross Production Tax proceeds for OCWP implementation (including studies) extended through 2016.**

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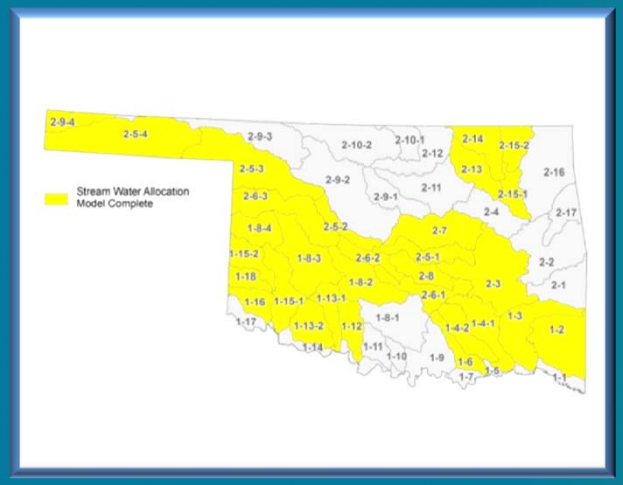
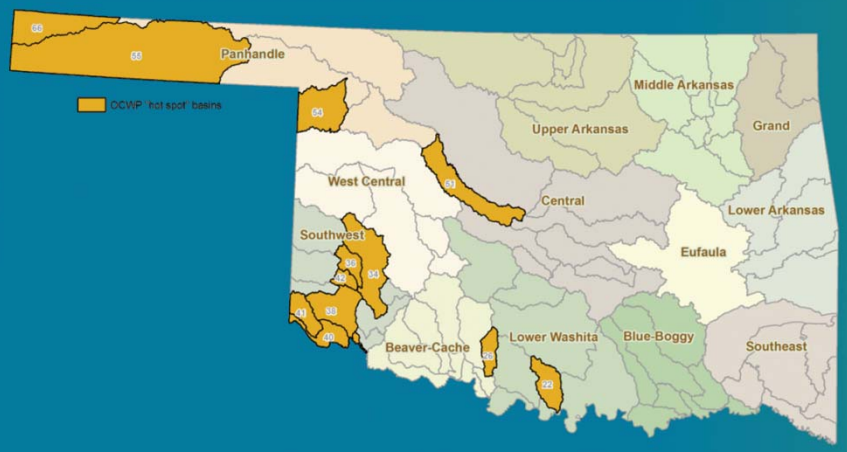
Water Supply Reliability: Stream Water Allocation Models



Modeled Basins



OCWP Hot Spot Basins

- 14 stream systems completed
- 36 stream systems to be studied
- Prioritize largely allocated systems
- Prioritize Hot Spot Basins

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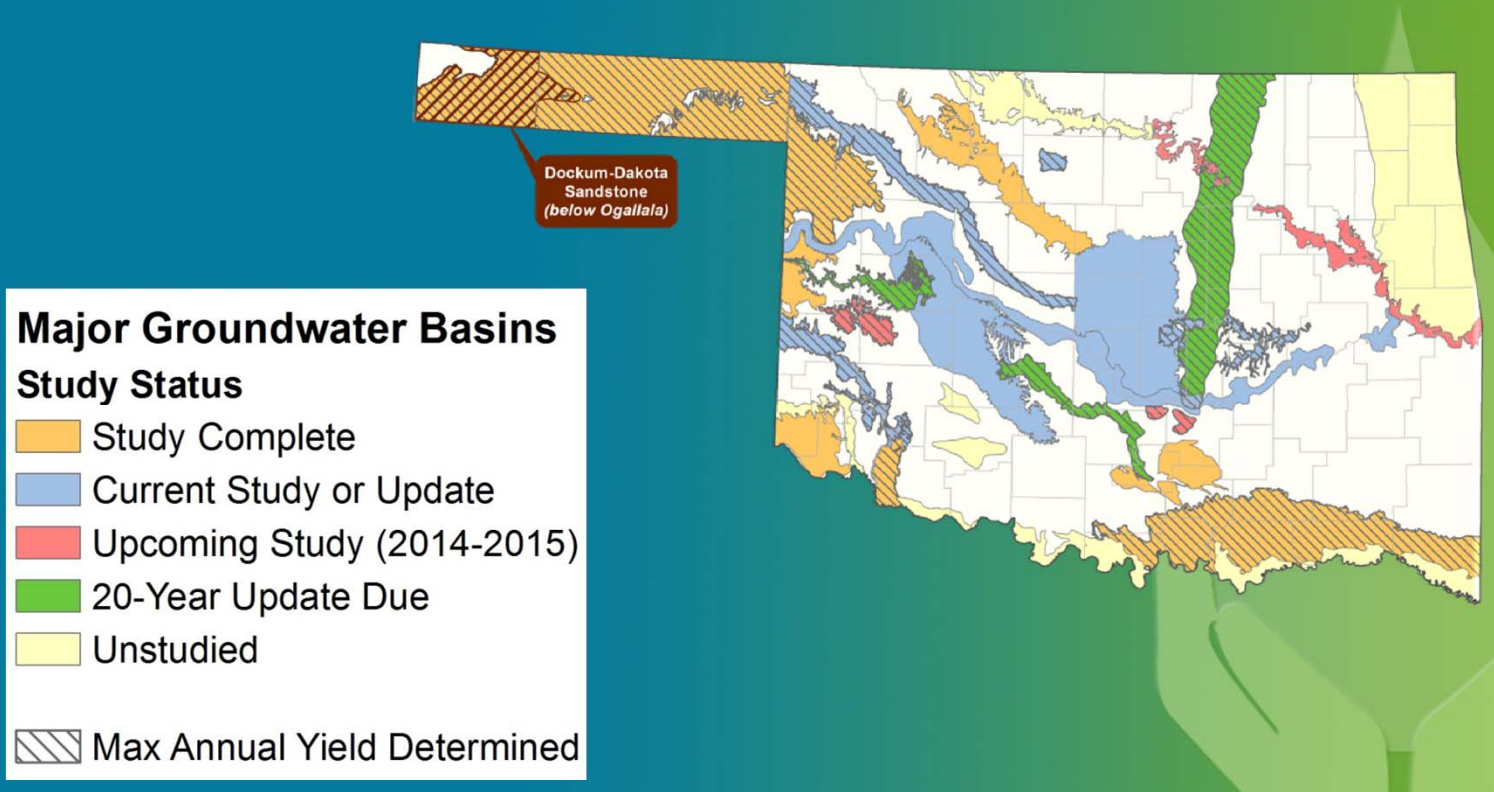
Water Supply Reliability: Major Groundwater Basin Studies

- **Complete all unstudied and overdue GW basins by 2022**



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OCWP Priority Recommendation

Instream/Environmental Flows:

- **Recognize nonconsumptive water needs and supporting recreational and local economic interests.**
- **Assess the suitability and structure of a potential instream flow program for Oklahoma.**
- **<u>Water rights could include curtailment triggers with flow regime</u>**

States with ISF Programs

State	ISF Program
Alaska	X
Arizona	X
California	X
Colorado	X
Idaho	X
Kansas	X
Montana	X
Nebraska	X
Nevada	X
New Mexico	X
North Dakota	
Oklahoma	
Oregon	X
South Dakota	X
Texas	X
Utah	X
Washington	X

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Instream Flow Advisory Work Group & Pilot Study

- Created in 2013 to preserve and continue the efforts of OCWP ISF Workgroup.
- Meets regularly to discuss potential for ISF Program in OK.
- Commenced ISF Pilot Study of Illinois River above Tenkiller Dam – June 2014

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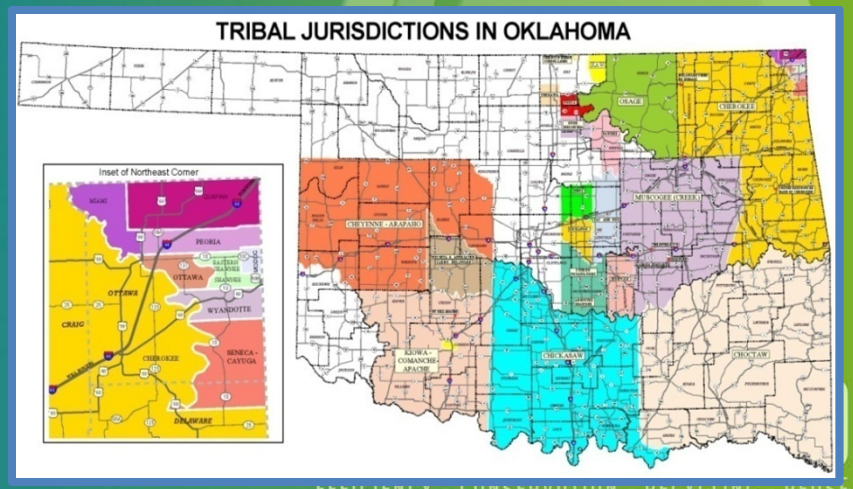
OCWP Priority Recommendation

State/Tribal Consultation & Resolution:

- **Build cooperation to avoid future conflict and remove uncertainties to water use.**
- **Governor, State Legislature & Tribes should make formal consultation a high priority.**

State currently in lawsuit with two tribes over water right application by Oklahoma City



OCWP Priority Recommendation

Regional Planning Groups— to increase portfolio of water options, share resources and increase awareness

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OCWP Priority Recommendation

Conservation, Efficiency, Recycling & Reuse:

- Promote voluntary initiatives to achieve an aggressive goal of maintaining statewide fresh water use at current levels – financial/recognition incentives, education programs.

- Water for 2060 Act focus on Municipal/Ag.
- Advisory Council to make recommendations to Governor and Legislature in late 2015.

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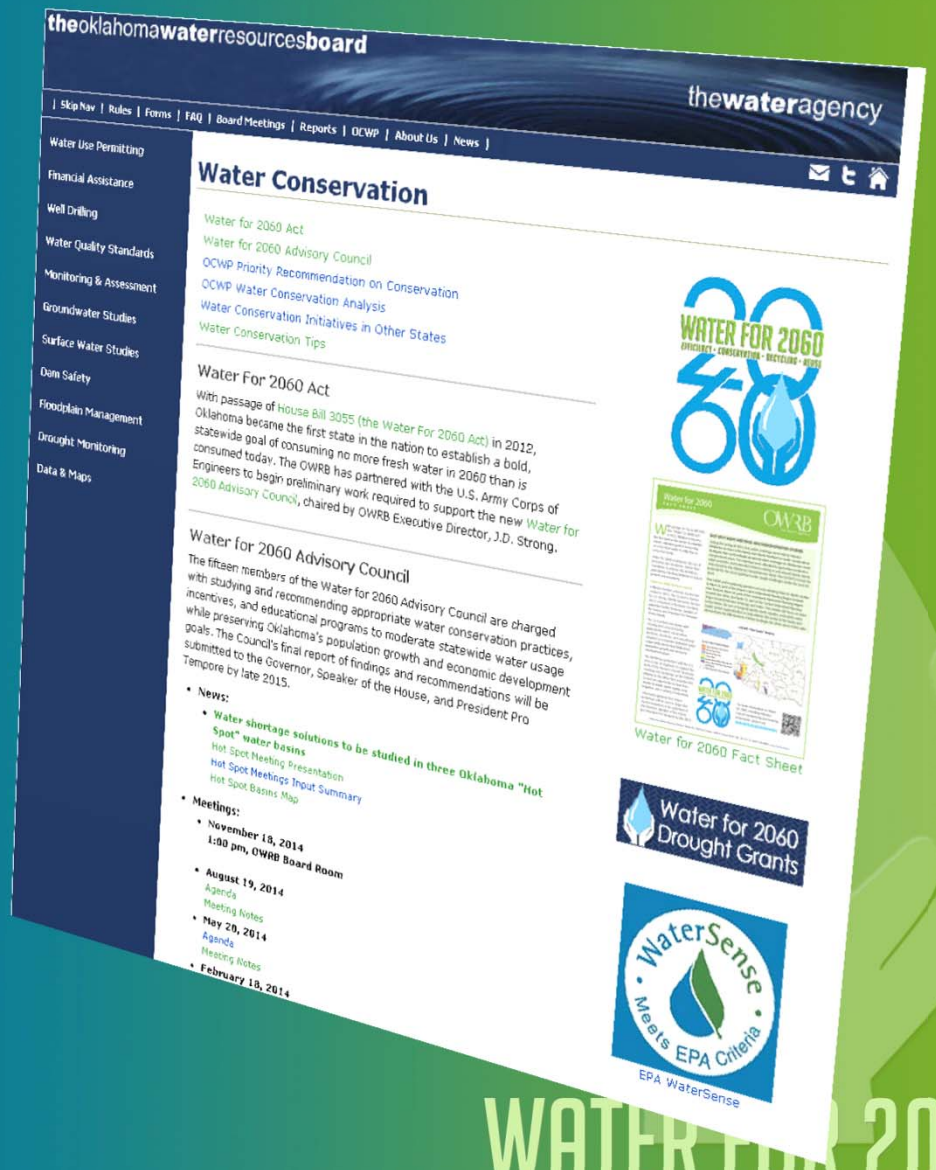
Water for 2060 Advisory Council

www.owrb.ok.gov/2060

Members:

- J.D. Strong, Chairman
- Jim Bachmann (Tulsa)
- Lauren Brookey (Tulsa)
- Tom Buchanan (Altus)
- Bob Drake (Davis)
- Danny Galloway (Stillwater)
- Roger Griffin (Broken Bow)
- Charlette Hearne (Broken Bow)
- Mark Helm (OKC)
- Nathan Kuhnert (OKC)
- Phil Richardson (Minco)
- Kevin Smith (Enid)
- Trent Smith (Choctaw)
- Joe Taron (Shawnee)
- Jerry Wiebe (Hooker)



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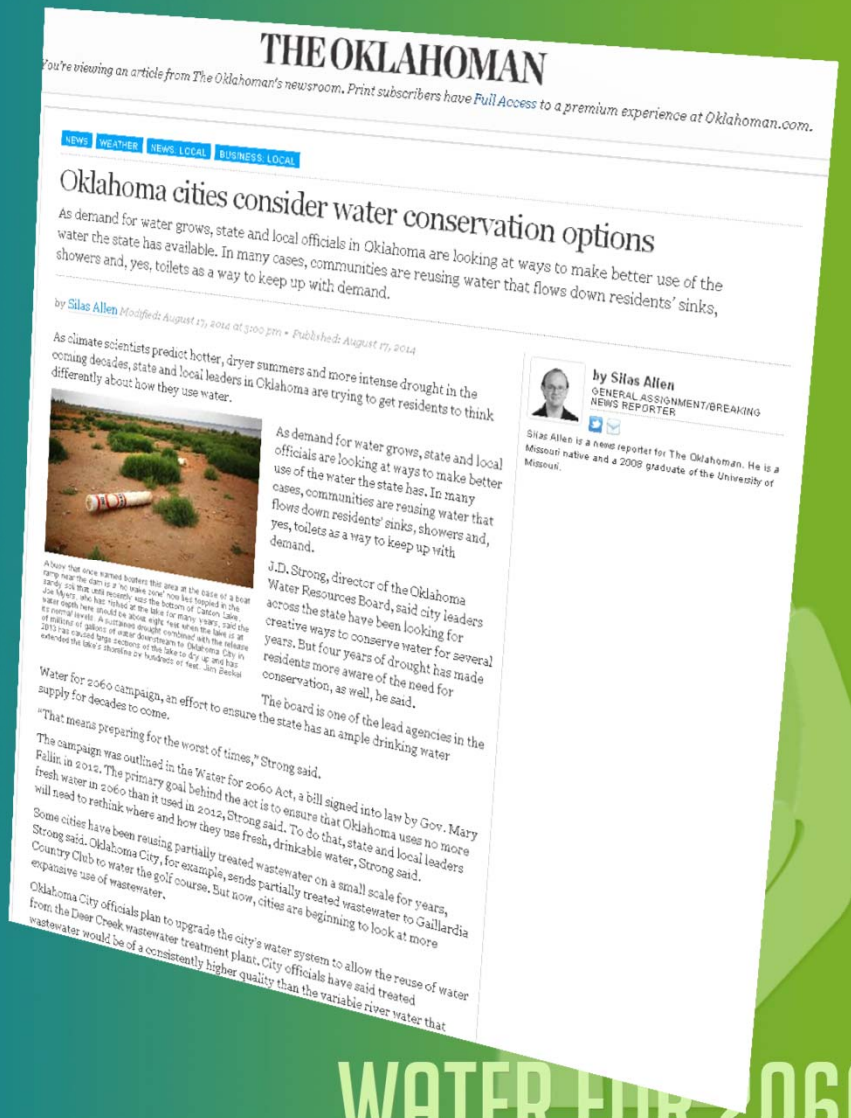
Conservation, Efficiency, Recycling & Reuse:

- **SB 1187 in 2014 encourages state to draft rules for reuse project permitting requirements.**
- **Rule-making process under-way at ODEQ with OWRB and other stakeholder input.**
- **Several communities interested in conservation through reuse, recycling, or marginal quality water use.**



THE OKLAHOMAN

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Oklahoma cities consider water conservation options

As demand for water grows, state and local officials in Oklahoma are looking at ways to make better use of the water the state has available. In many cases, communities are reusing water that flows down residents' sinks, showers and, yes, toilets as a way to keep up with demand.

by Silas Allen *Modified: August 17, 2014 at 3:00 pm • Published: August 17, 2014*

As climate scientists predict hotter, dryer summers and more intense drought in the coming decades, state and local leaders in Oklahoma are trying to get residents to think differently about how they use water.

As demand for water grows, state and local officials are looking at ways to make better use of the water the state has. In many cases, communities are reusing water that flows down residents' sinks, showers and, yes, toilets as a way to keep up with demand.

J.D. Strong, director of the Oklahoma Water Resources Board, said city leaders across the state have been looking for creative ways to conserve water for several years. But four years of drought has made residents more aware of the need for conservation, as well, he said.

The board is one of the lead agencies in the Water for 2060 campaign, an effort to ensure the state has an ample drinking water supply for decades to come.

"That means preparing for the worst of times," Strong said.

The campaign was outlined in the Water for 2060 Act, a bill signed into law by Gov. Mary Fallin in 2012. The primary goal behind the act is to ensure that Oklahoma uses no more fresh water in 2060 than it used in 2012, Strong said. To do that, state and local leaders will need to rethink where and how they use fresh, drinkable water, Strong said.

Some cities have been reusing partially treated wastewater on a small scale for years, Strong said. Oklahoma City, for example, sends partially treated wastewater to Gaillardia Country Club to water the golf course. But now, cities are beginning to look at more expansive use of wastewater.

Oklahoma City officials plan to upgrade the city's water system to allow the reuse of water from the Deer Creek wastewater treatment plant. City officials have said treated wastewater would be of a consistently higher quality than the variable river water that

by Silas Allen
GENERAL ASSIGNMENT/BREAKING NEWS REPORTER

Silas Allen is a news reporter for The Oklahoman. He is a Missouri native and a 2008 graduate of the University of Missouri.

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Water Rights Administration Updates

- GW Law Updates—Arbuckle Simpson Aquifer yield determination and SB 288
- New implementation rules- well spacing
- Stream water law review
- Water Rights Planning Emphasis
- O&G development

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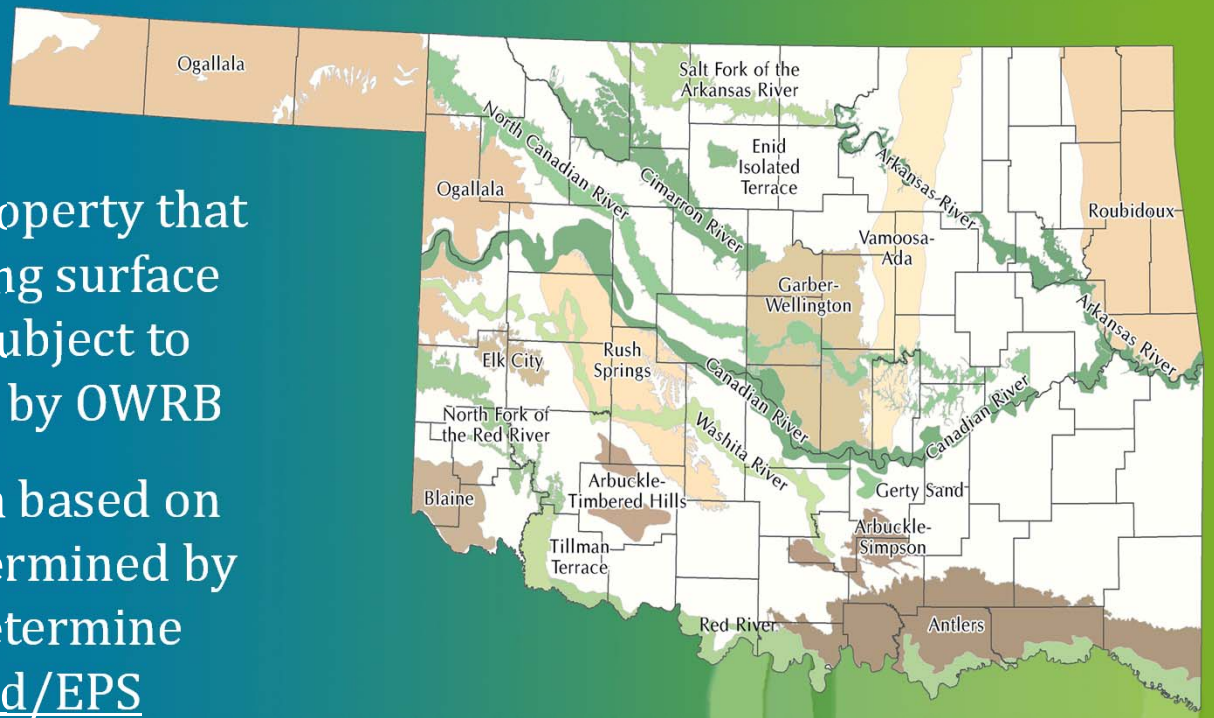
Oklahoma Groundwater Law

- Considered private property that belongs to the overlying surface owner, although it is subject to reasonable regulation by OWRB
- Reasonable regulation based on <u>water availability</u> determined by hydrologic study to determine <u>Maximum Annual Yield/EPS</u>
- Statutes provide that OWRB…
  - Conduct MAY studies and "at minimum" 20-yr updates
  - Administer water rights and use reporting



21 major groundwater aquifers store 388 million a.f. of water

10,500 groundwater permits allocate 3.4 million a.f./year

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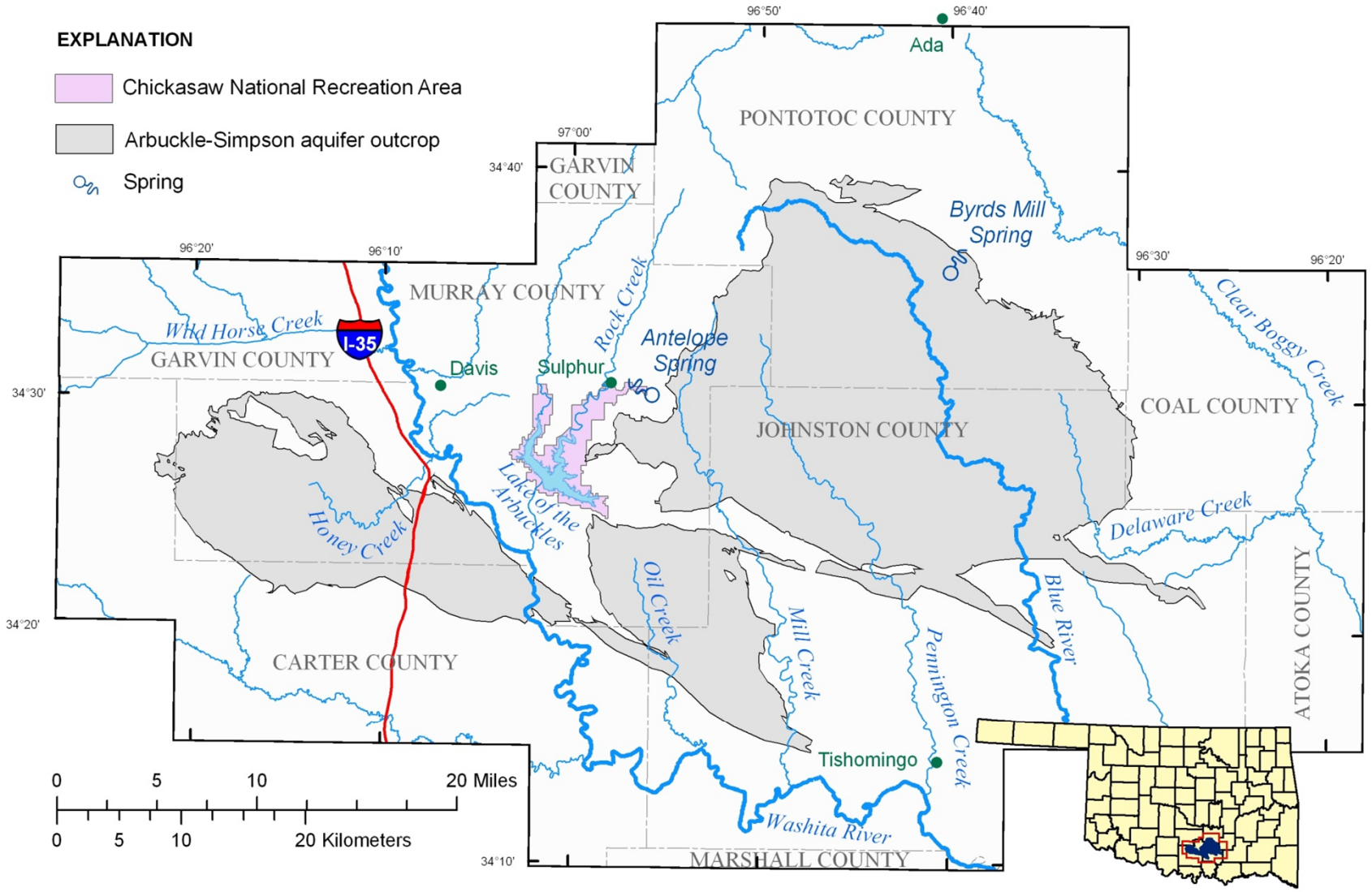
Arbuckle-Simpson Max. Annual Yield

- SB 288 (2003)— moratorium on issuance of gw permits for municipal/PWS use outside a county overlying a "sensitive sole source groundwater basin"…until the OWRB…
  1. completes study and approves a MAY that will not reduce the natural flow of water from springs or streams emanating from the aquifer.
  2. Prior to permit issuance, determines that gw use not likely to degrade/interfere with springs or stream flows
- **First time in state history that effects of gw pumping on stream flows considered!!**

Status

- USGS Scientific Investigation approved for publication by USGS in January 2011.
- Tentative Board Order and hearing complete, Final order approved October 2013
- Appeals filed by local landowners and concerned citizens


Buffalo Spring in Chickasaw


EXPLANATION
Chickasaw National Recreation Area
Arbuckle-Simpson aquifer outcrop
Spring
96°50'
96°40'
Ada
PONTOTOC COUNTY
97°00'
34°40'
GARVIN COUNTY
Byrds Mill Spring
96°20'
96°10'
96°30'
96°20'
MURRAY COUNTY
Rock Creek
Clear Boggy Creek
Wild Horse Creek
I-35
GARVIN COUNTY
Davis
Sulphur
Antelope Spring
34°30'
COAL COUNTY
JOHNSTON COUNTY
Lake of the Arbuckles
Honey Creek
Delaware Creek
Oil Creek
Mill Creek
Blue River
Pennington Creek
ATOKA COUNTY
34°20'
CARTER COUNTY
Tishomingo
0 5 10 20 Miles
0 5 10 20 Kilometers
Washita River
34°10'
MARSHALL COUNTY

OAC 785: Chapter 30. Taking and Use of GW 785: 30-3-6

Within a sensitive sole source groundwater basin where the MAY has been determined:

- ¼-mi. setback from >50gpm springs
- 2-mi. setback from >500 gpm springs if use >1,600 af/yr; or applicant demonstrate no impacts when requesting to drill within this area
- 1-mile setback from perennial streams with >500 gpm flow.
- No restrictions and assume no impact if outside setback areas
- Setback exception if land configuration does not accommodate a well or applicant can demonstrate that withdrawal of water won't degrade or interfere with springs/streams

Water Rights Planning at the Community Level

Obtain and Maintain Water Rights

Prior and Vested Rights: prior to current regulatory system

Long-term Permits: Regular/temp. (gw only), term, seasonal

- GW— Permits indefinite; based on basin yield and land
- SW—Permits subject to revocation for non-use; interference

90-day Provisional Temporary Permits: Nonrenewable; granted at discretion of Director; subject to cancellation; no notice or hearings requirements;

Limited Quantity Permits: authorize up to 15 af during calendar yr.; granted at the discretion of Director; require general notice;

Waters Permitting Options: Obtain permit OR purchase

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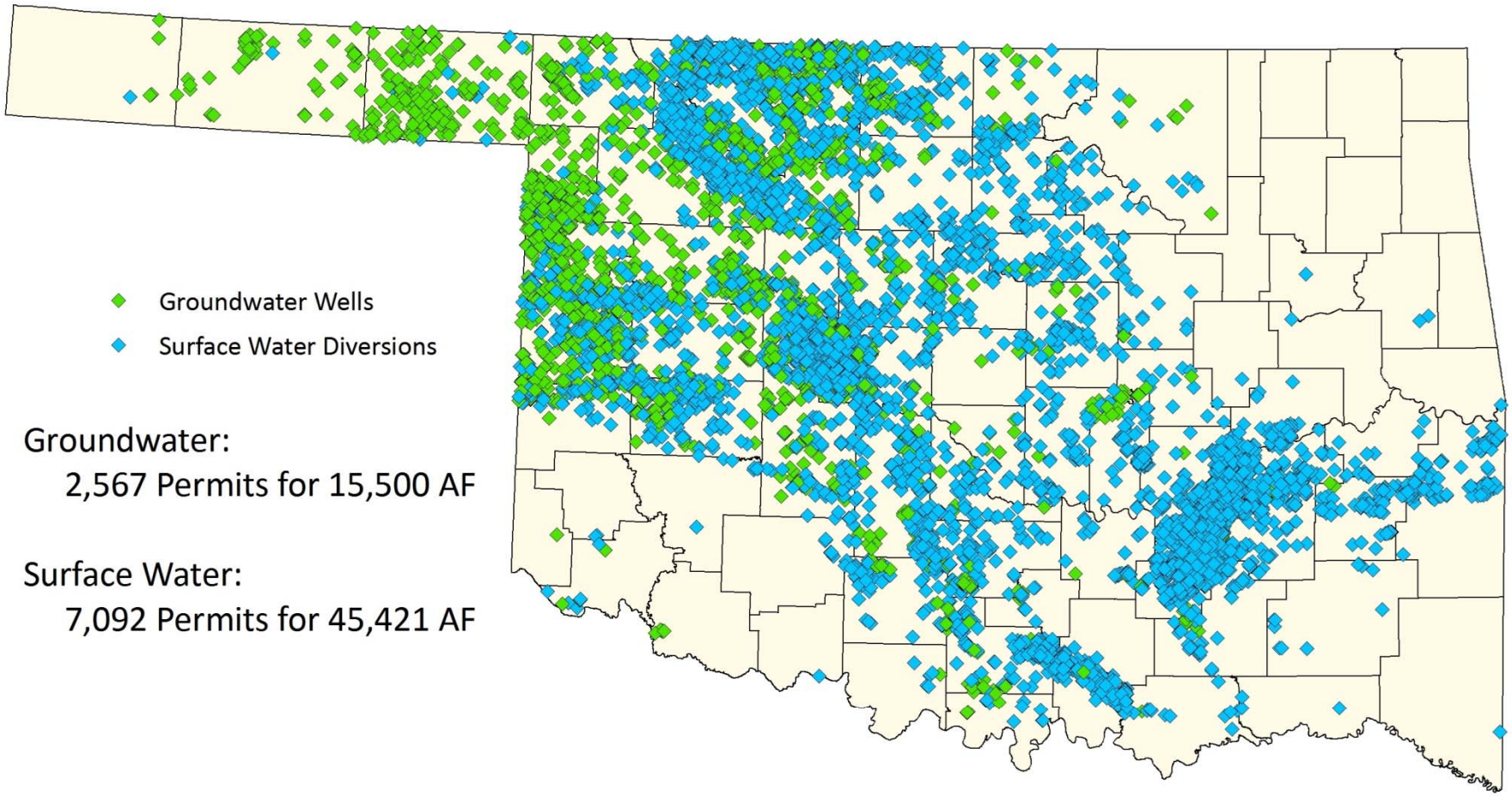
90-Day Provisional-Temporary Permits for Oil & Gas Production since 2007

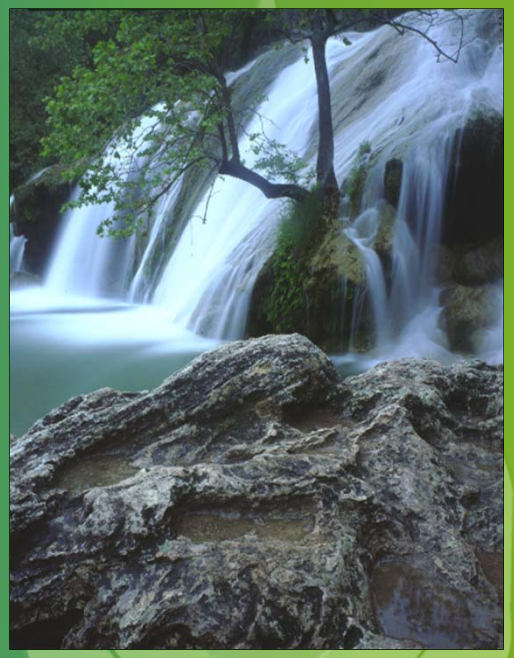


Groundwater:
2,567 Permits for 15,500 AF

Surface Water:
7,092 Permits for 45,421 AF

Oklahoma Stream Water Law

- Water inside a natural channel, within cut bed and banks, including ponds and lakes
- Stream water **publicly-owned** and **subject to appropriation** by the OWRB
- "Domestic uses" have priority and exempt from permitting
- Seniority by water right date and no priority of use type
- Subject to use-it-or-lose-it provisions
- OWRB charged with determining if unappropriated water is available prior to permit issuance and addressing interference conflicts after issuance



Water Rights Planning at the Community Level

Avoid Stream Water 'Speculation' After Permit Issuance

- Commence project within 2-years
- Complete works within 7-years
- If use from Federal reservoir, enter into a storage contract with USACE within 2-years
- Forfeiture use-it-or-lose-it (7-year default)
- Review schedule of Use (exception for large projects) allows phased-in use over a specified period of time (lose if fail to keep schedule)

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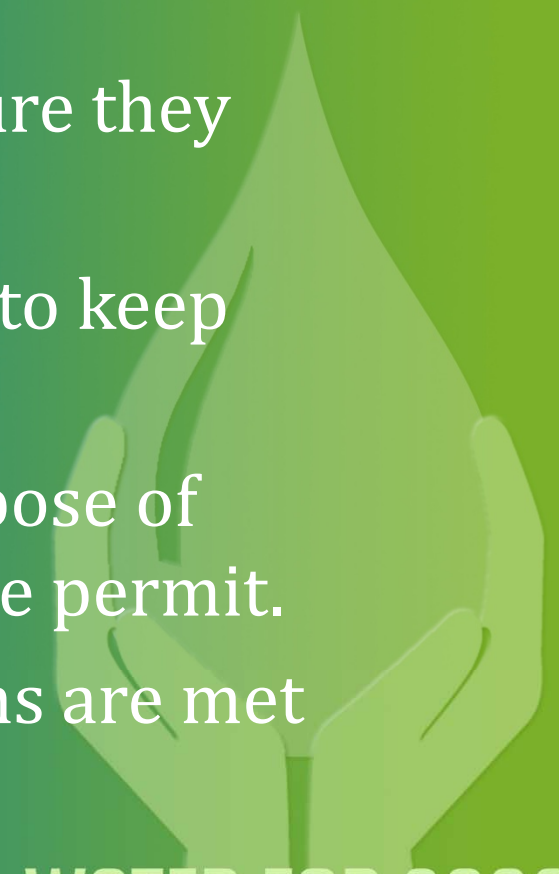
Water Rights Planning at the Community Level

Review Existing Water Rights

- Check leases and easements to ensure they have not expired.
- Submit any lease updates to OWRB to keep the permit current.
- Ensure water use, place of use, purpose of use, withdrawal point, etc. match the permit.
- Ensure any special permit conditions are met (pumping rate, seasonality, etc.).



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Water Rights Planning at the Community Level

Report Annual Water Use

- Statutory requirement and failure to properly report considered non-use- may result in cancellation/reduction of water right
- Forms sent out at end of year and due to OWRB by March 15th. Completed reports MUST contain:
- Water Amounts: total amounts used for each permitted use in gallons or acre-feet
- Municipalities must complete the second page which lists month-to-month usage of self-supplied and purchased water

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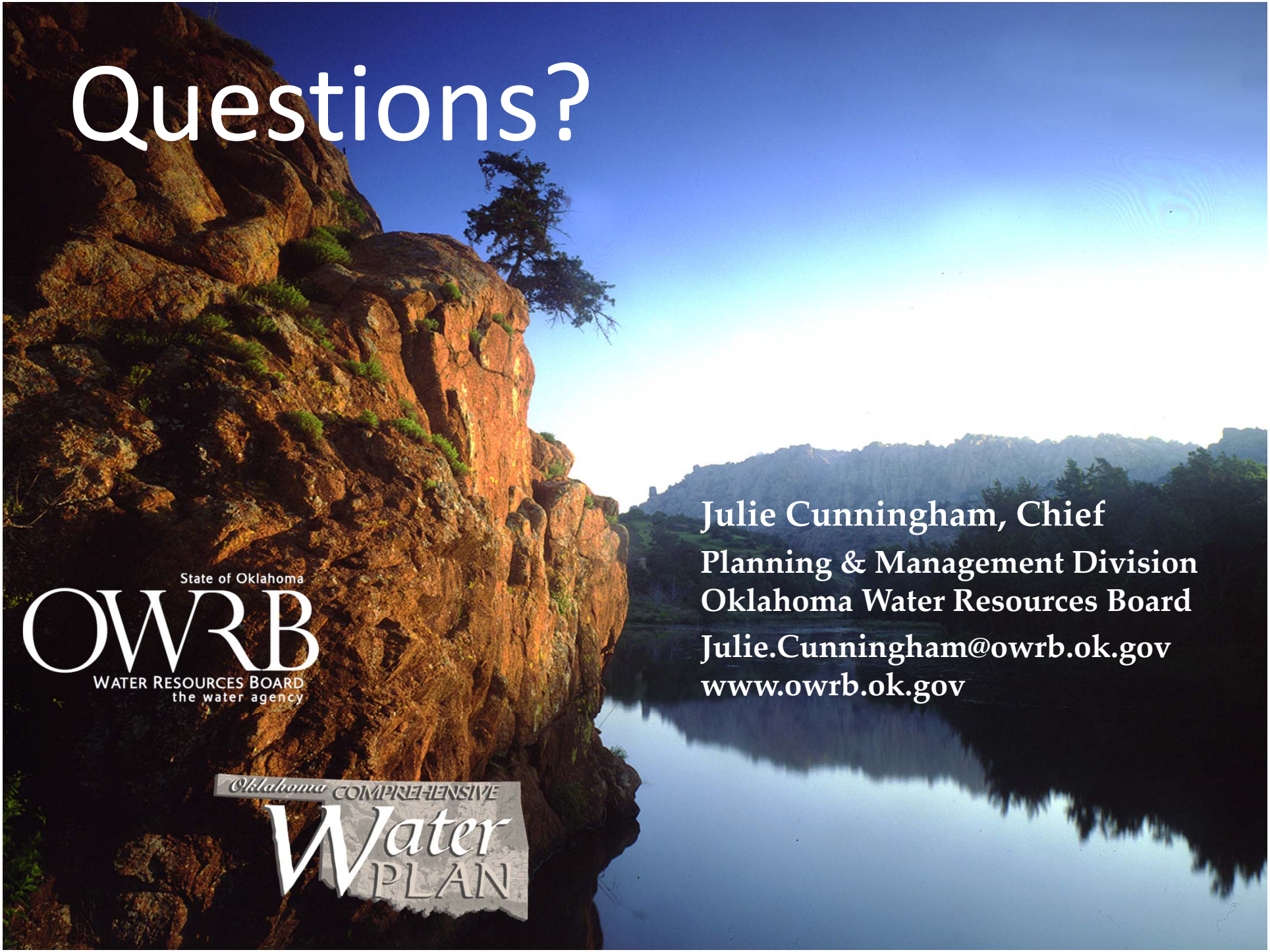
Questions?
State of Oklahoma
OWRB
WATER RESOURCES BOARD
the water agency
Oklahoma COMPREHENSIVE
Water
PLAN
Julie Cunningham, Chief
Planning & Management Division
Oklahoma Water Resources Board
Julie.Cunningham@owrb.ok.gov
www.owrb.ok.gov