

Water for 2060 ...and Beyond

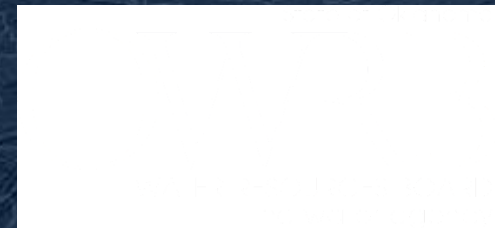
**Western State Water Resources
Infrastructure Needs & Strategies**

November 15, 2012

J. D. Strong
Executive Director



Oklahoma Comprehensive Water Plan



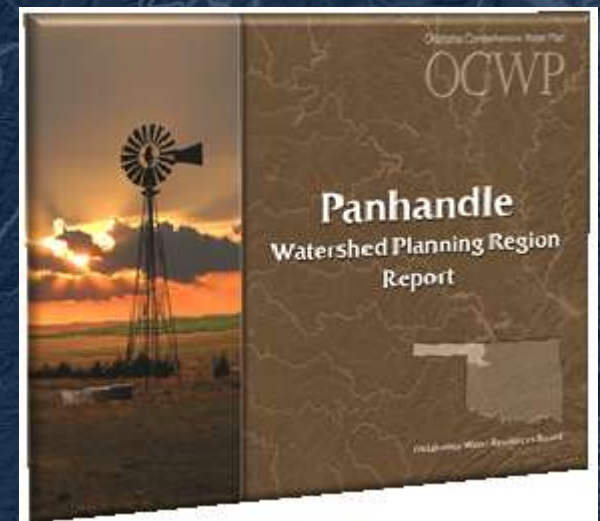
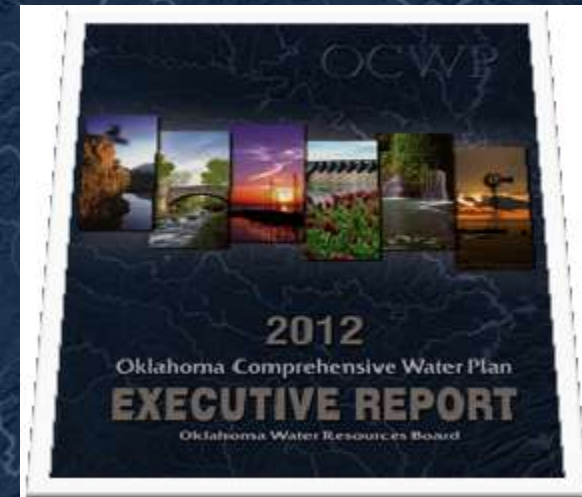
Most Comprehensive Plan Ever

Executive Report:

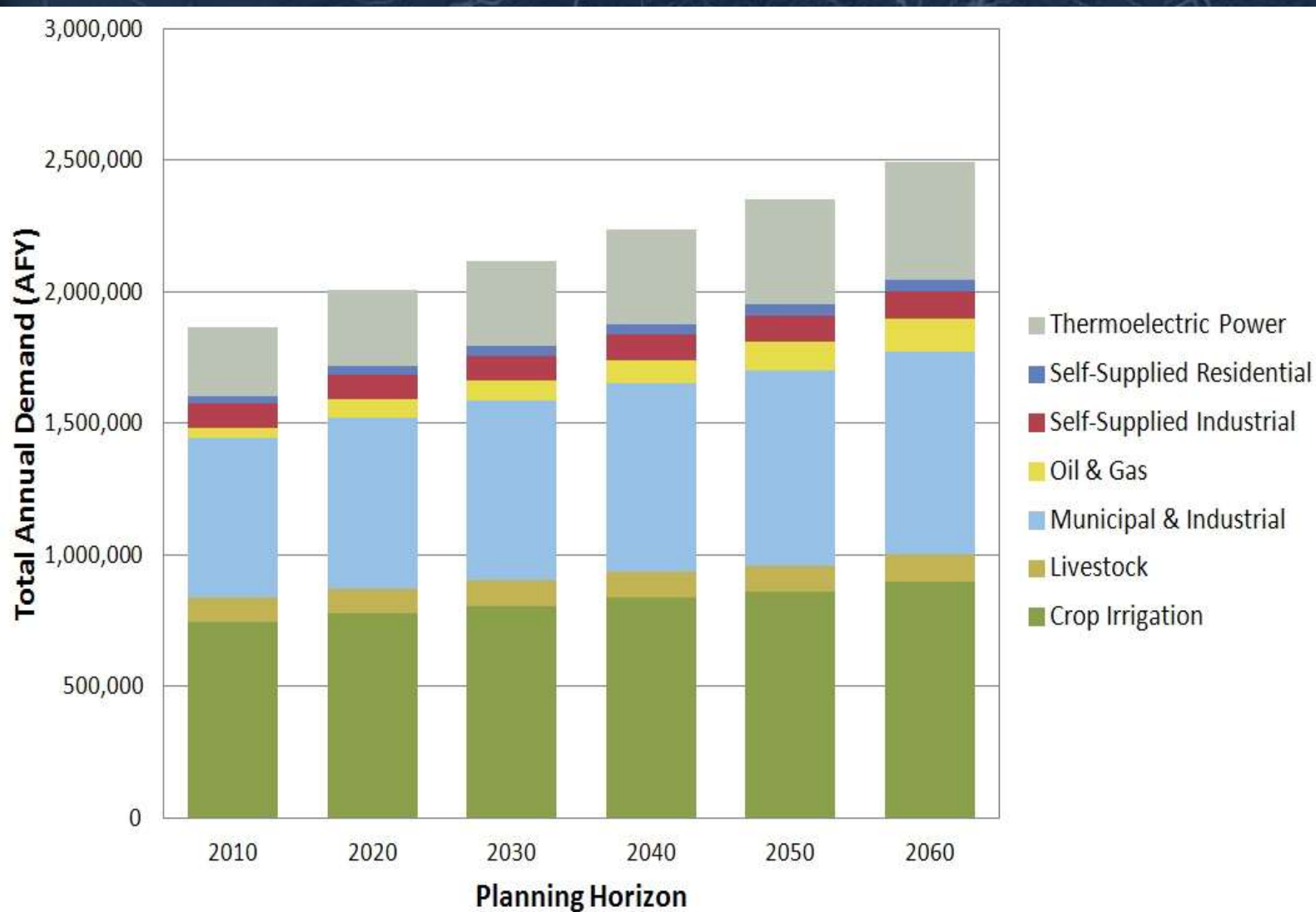
- Synthesis of OCWP technical studies and results
- Water policy recommendations

13 Watershed Planning Region Reports:

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

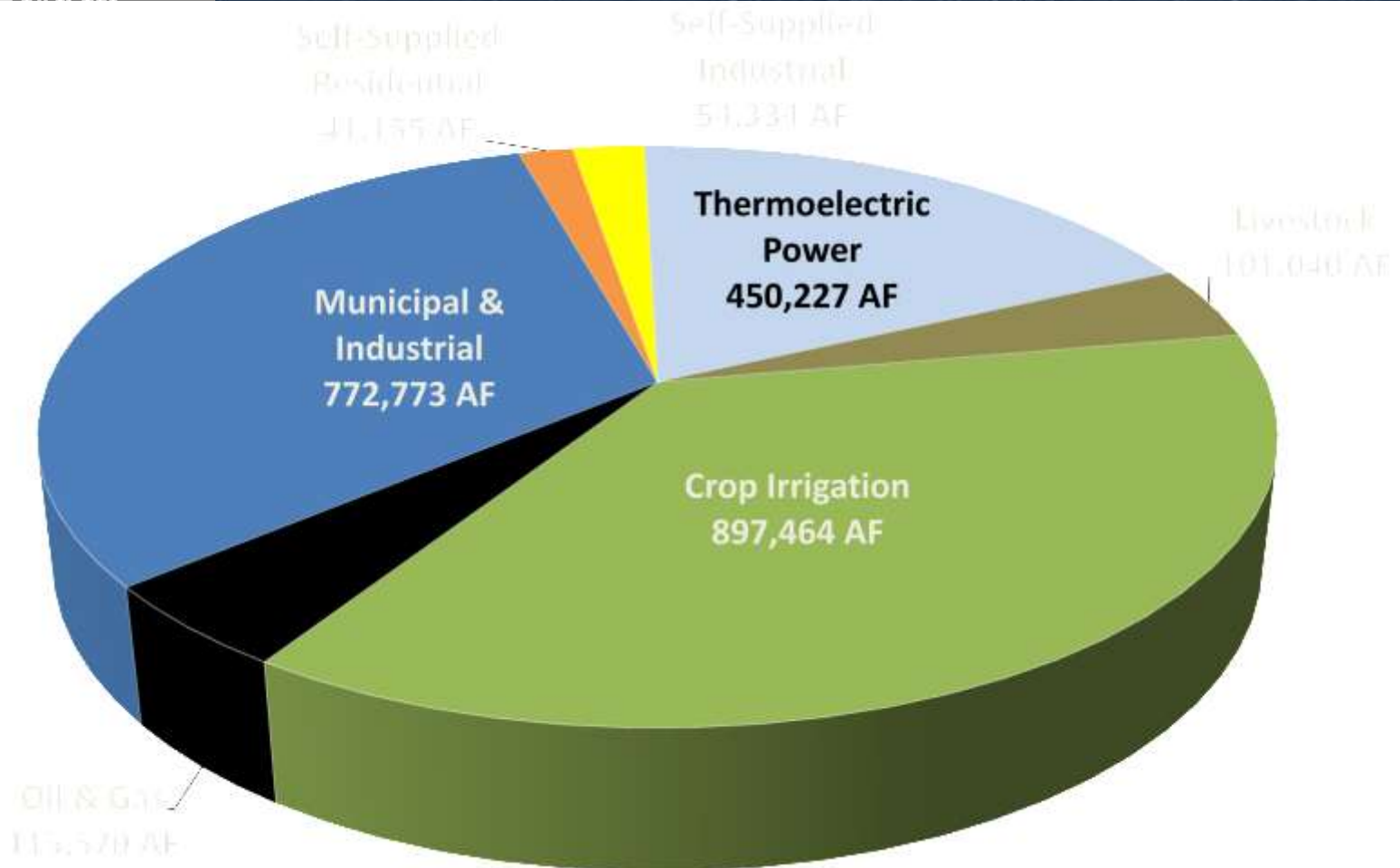


Total Water Demands (2010-2060)



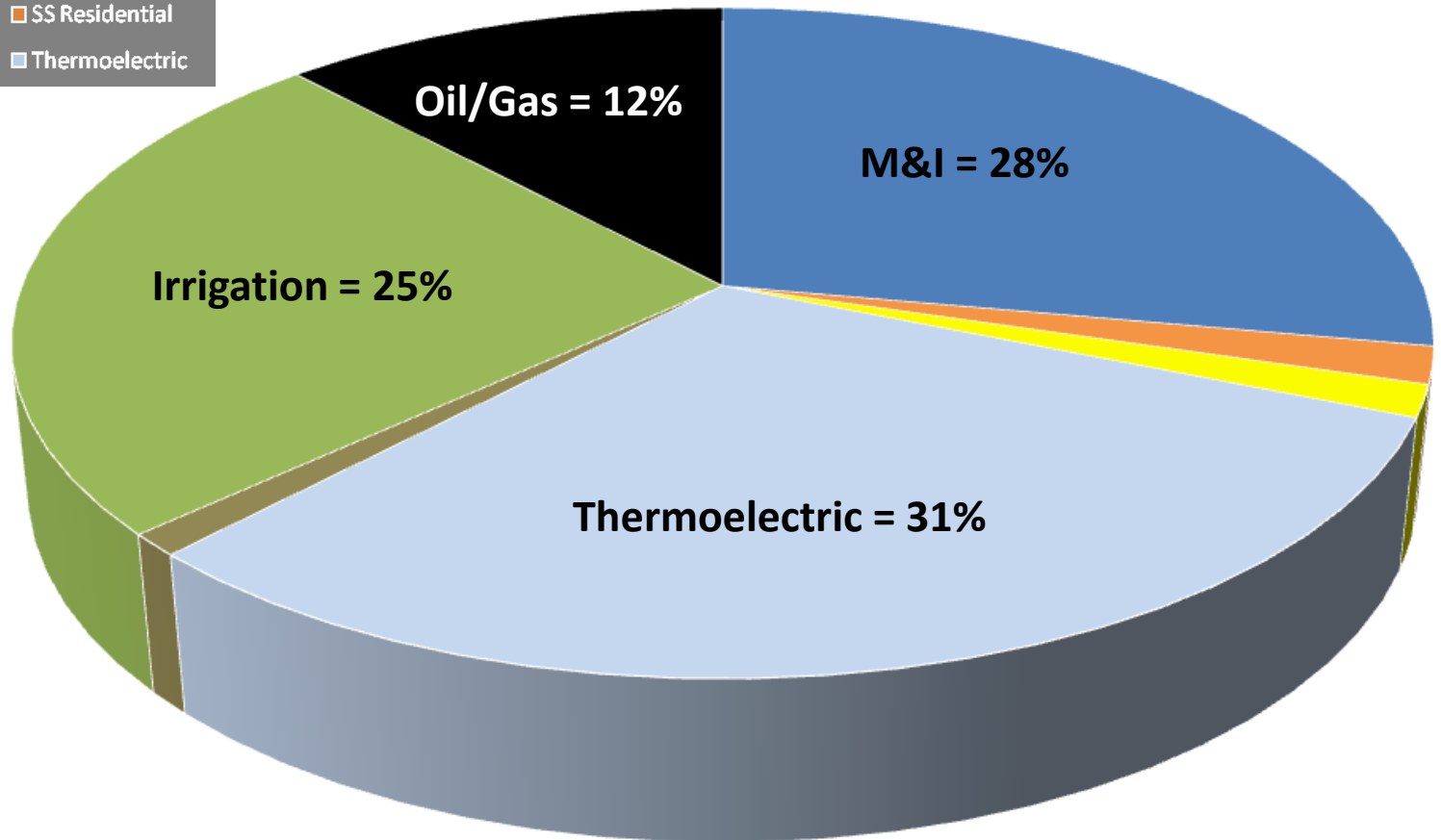
2060 Statewide Water Demand

- Irrigation
- Livestock
- M&I
- Oil & Gas

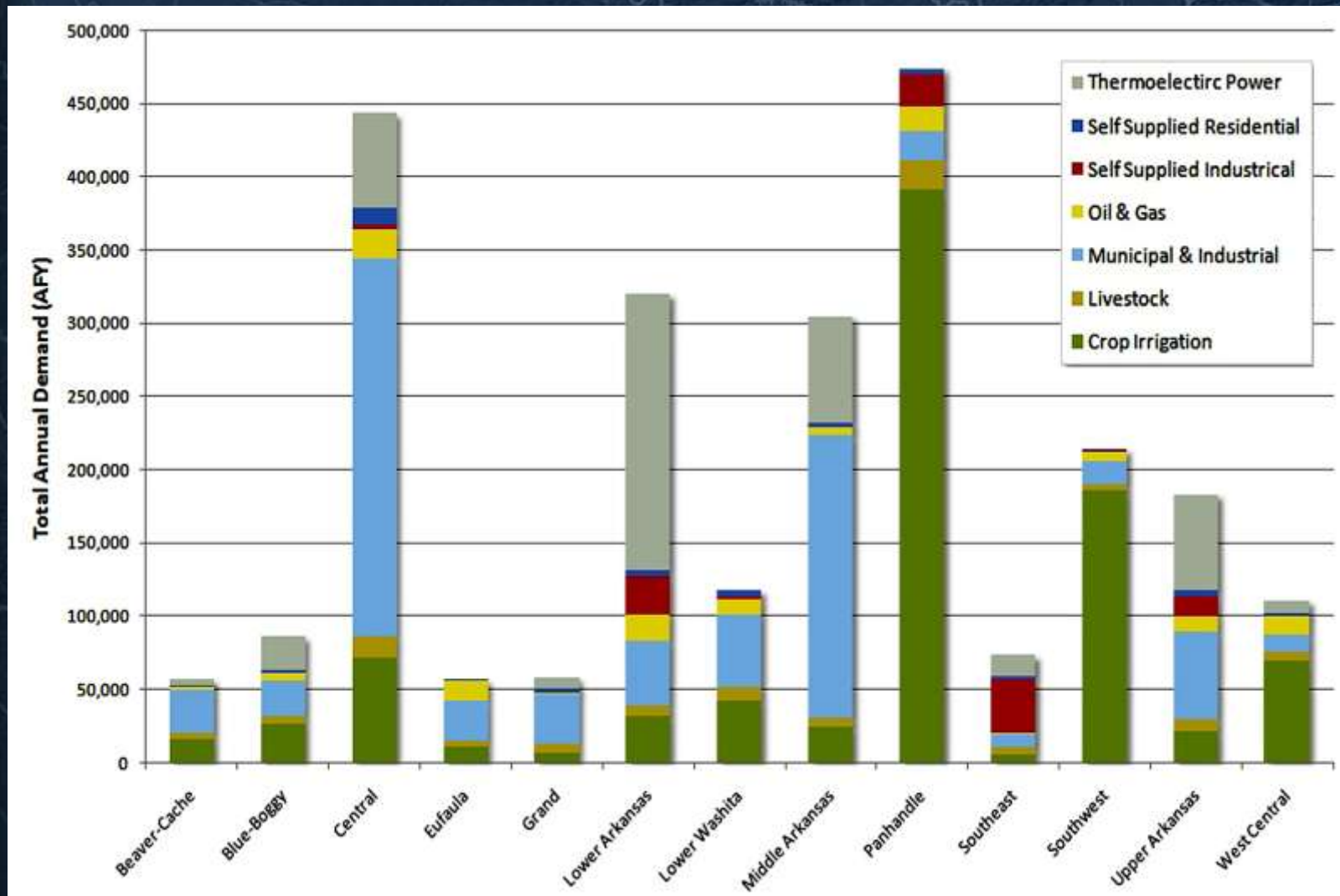


Growth by Water Use Sector (2010-2060)

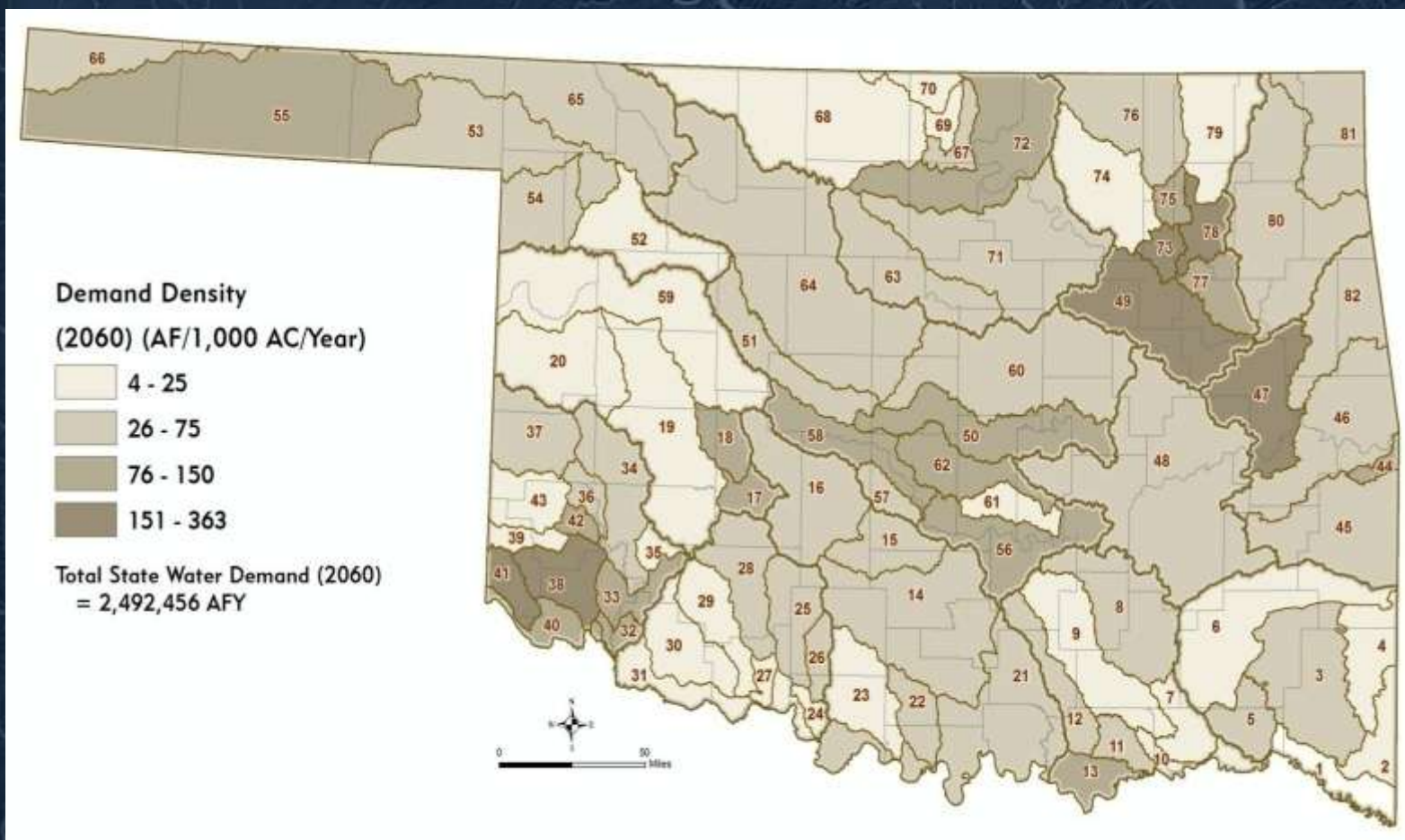
- Irrigation
- Livestock
- M&I
- Oil & Gas
- SS Industrial
- SS Residential
- Thermoelectric



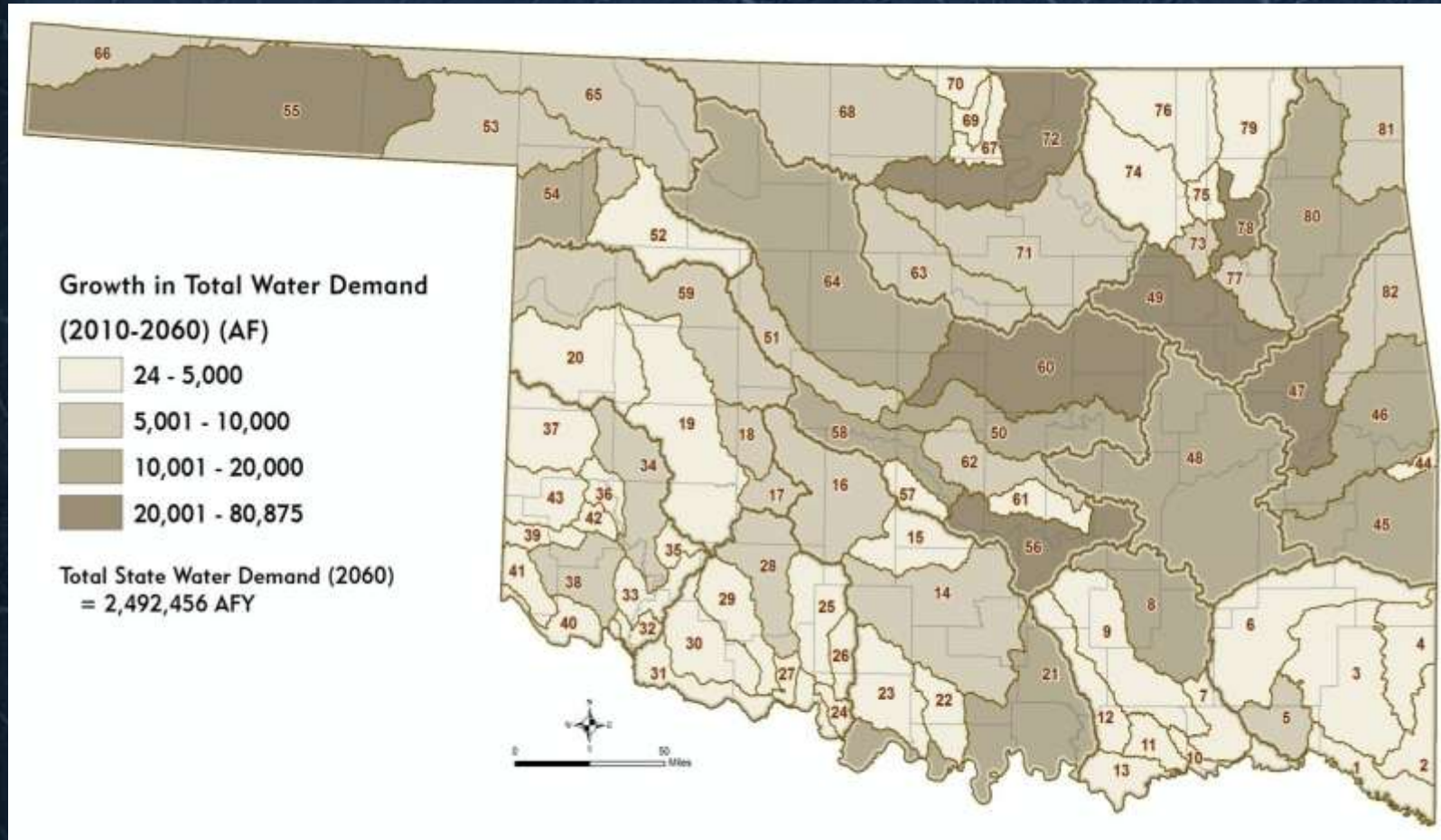
2060 Total Water Demands By Region



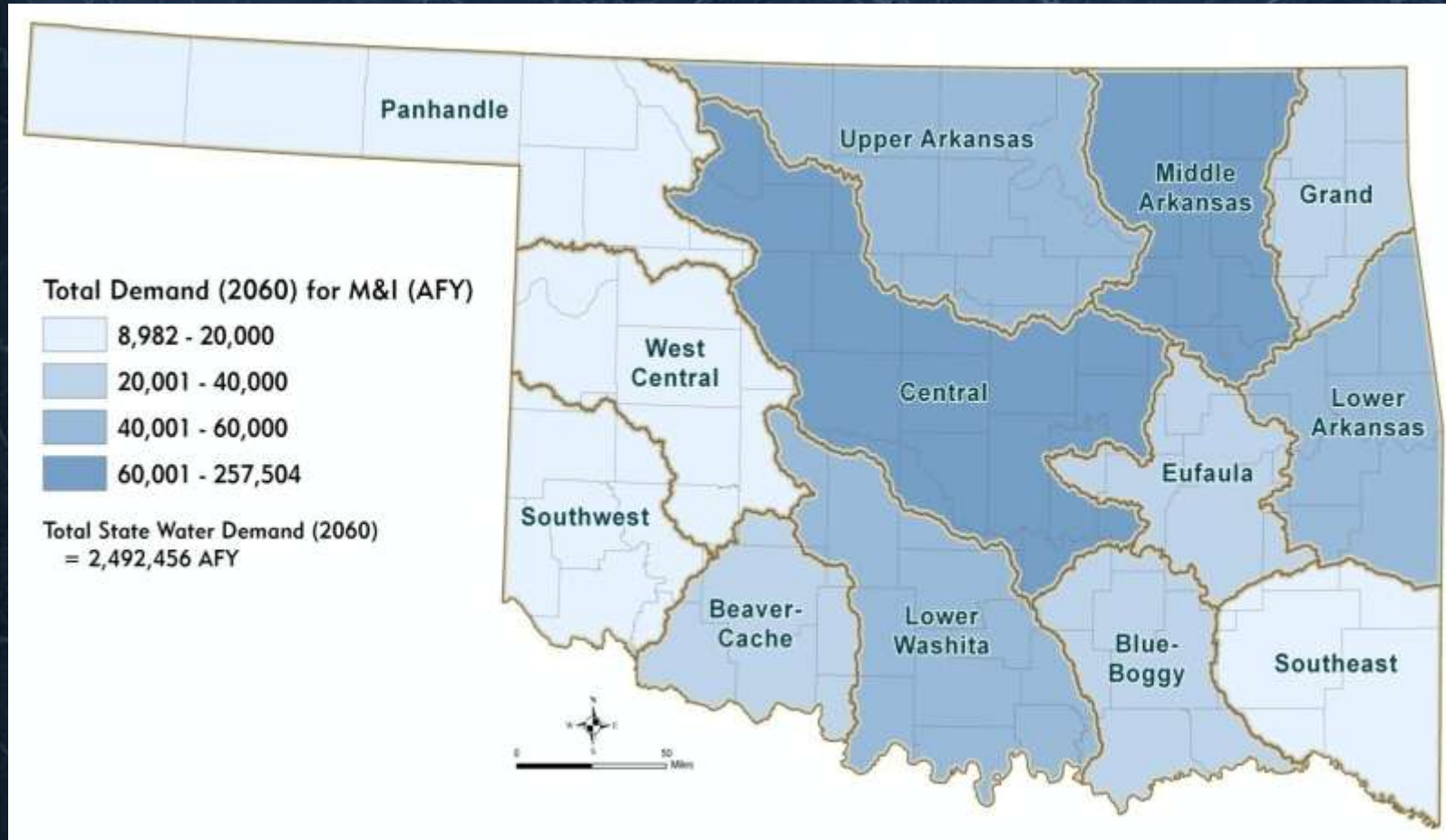
2060 Basin Water Demand Density



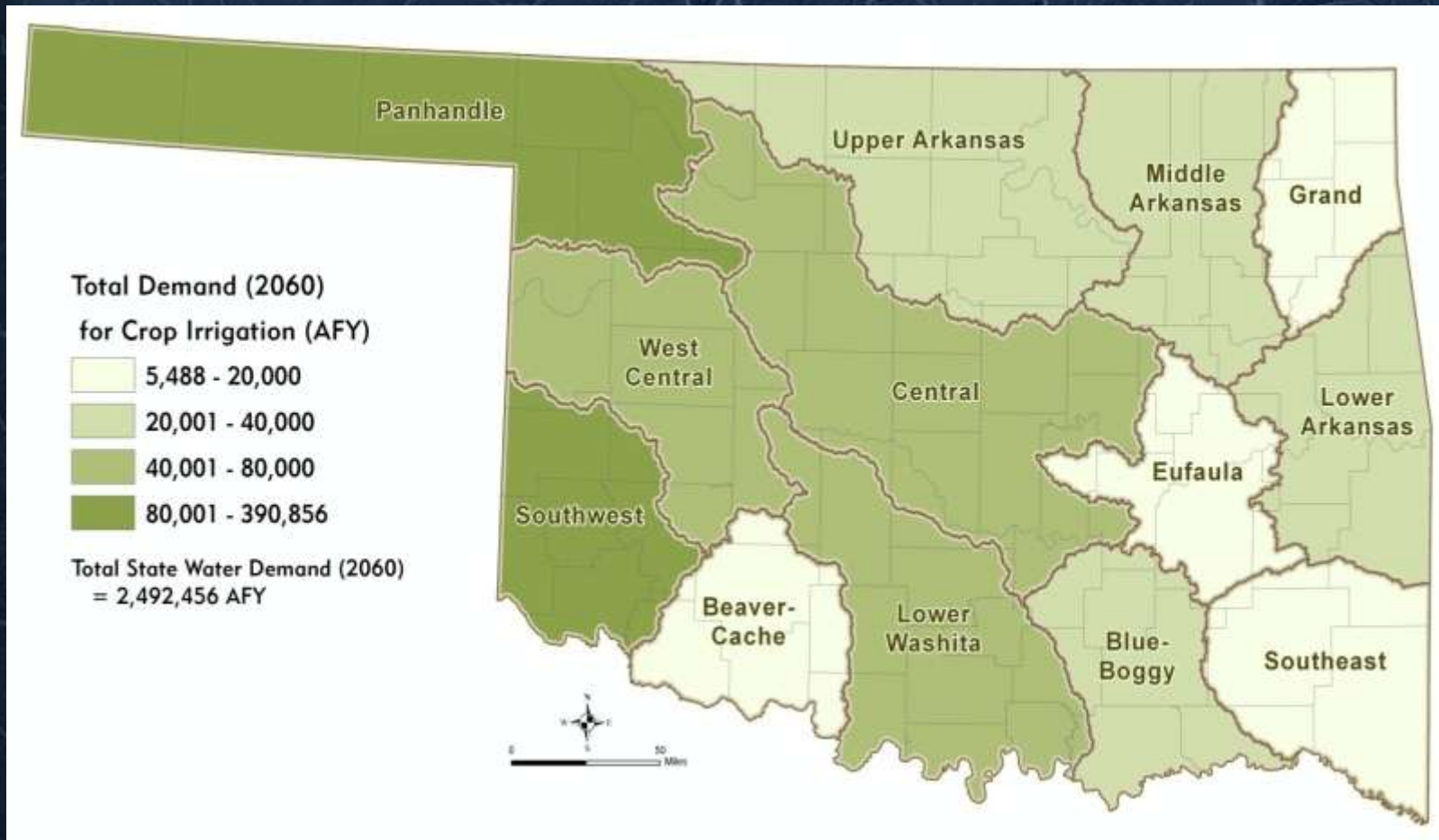
2010-2060 Growth In Total Basin Water Demand



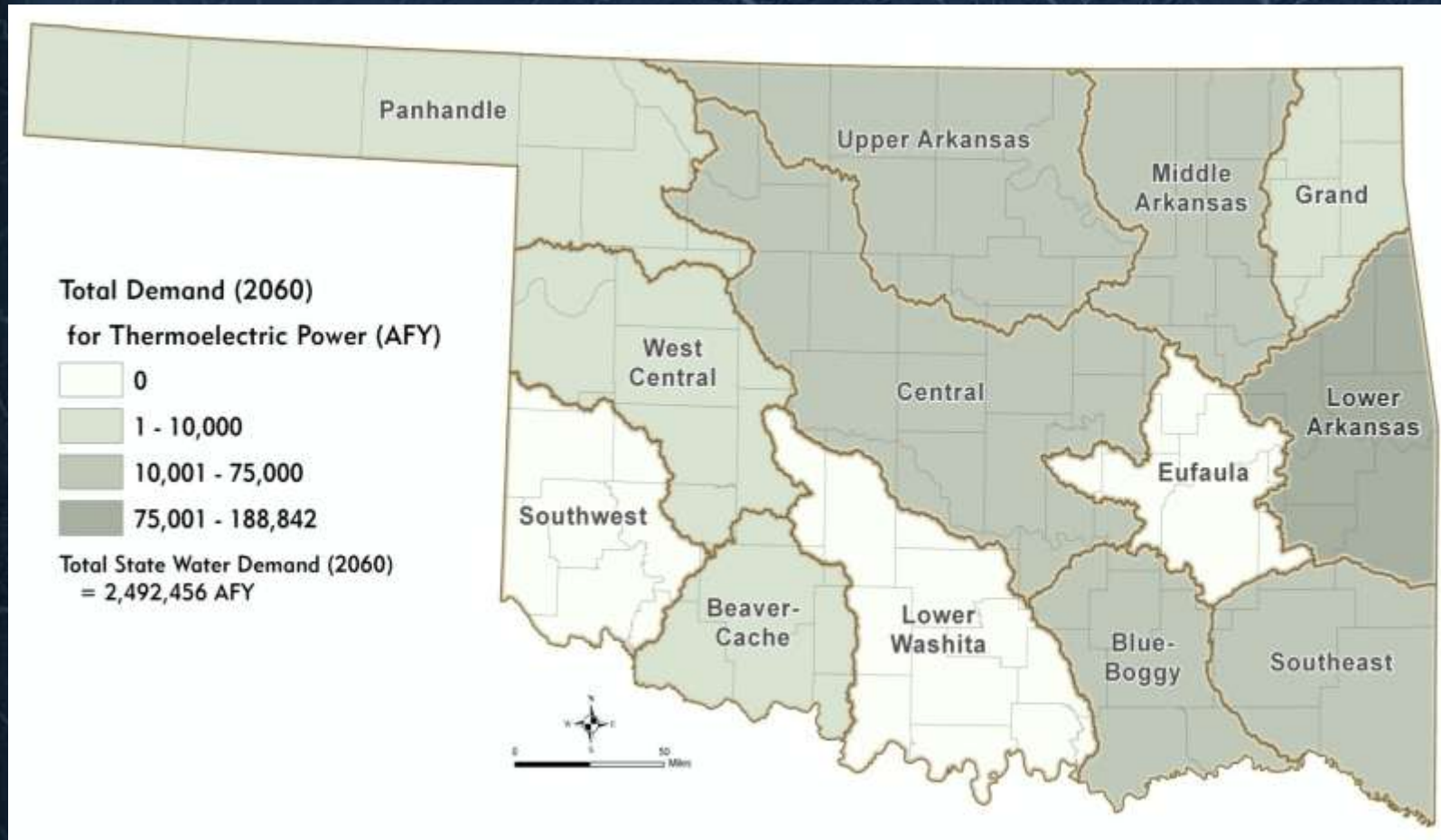
2060 Municipal/Industrial Demand



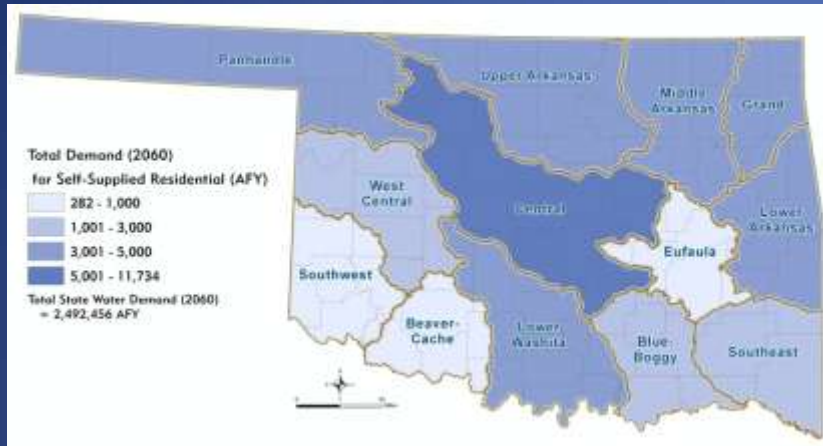
2060 Crop Irrigation Water Demand



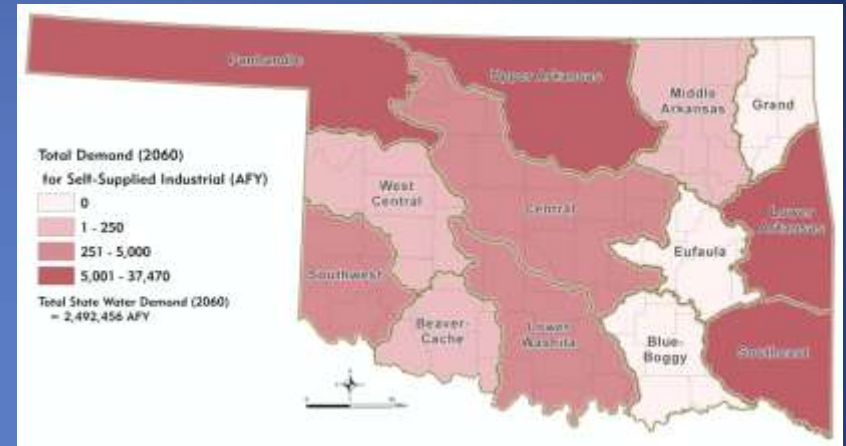
2060 Thermoelectric Power Water Demand



Other 2060 Water Demands



Self-Supplied Residential



Self-Supplied Industrial



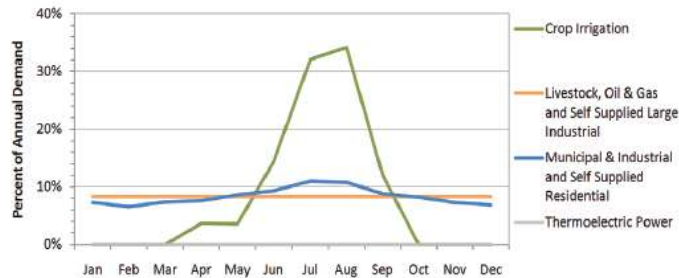
Livestock



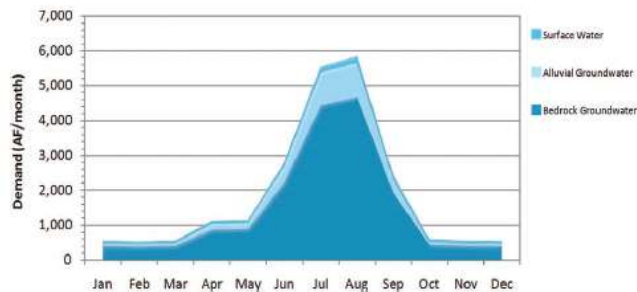
Oil & Gas

Detailed Analyses in Region

Monthly Demand Distribution by Sector (2010)
West Central Region, Basin 59



Monthly Demand Distribution by Source (2010)
West Central Region, Basin 59



Surface Water Gaps
by Season (2060 Demand)
West Central Region, Basin 59

Months (Season)	Maximum Gap ¹	Median Gap	Probability
	AF	AF	Percent
Dec-Feb (Winter)	100	100	28%
Mar-May (Spring)	100	80	14%
Jun-Aug (Summer)	80	80	47%
Sep-Nov (Fall)	100	80	34%

¹ Amount shown represents largest amount for any one month in season indicated.

Magnitude and Probability of Annual Gaps
and Storage Depletions
West Central Region, Basin 59

Planning Horizon	Maximum Gaps/Storage Depletions			Probability of Gaps/Storage Depletions	
	Surface Water	Alluvial Groundwater	Bedrock Groundwater	Surface Water	Alluvial Groundwater
	AF			Percent	
2020	110	280	0	80%	88%
2030	280	480	0	88%	88%
2040	470	710	0	88%	88%
2050	660	980	20	85%	85%
2060	920	1,340	290	87%	87%

“Big 8” Priority Recommendations

**Water Project & Infrastructure
Funding**

Regional Planning Groups

Excess & Surplus Water

Instream/Environmental Flows

**State/Tribal Water Consultation &
Resolution**

**Water Conservation, Recycling &
Reuse**

Water Supply Reliability

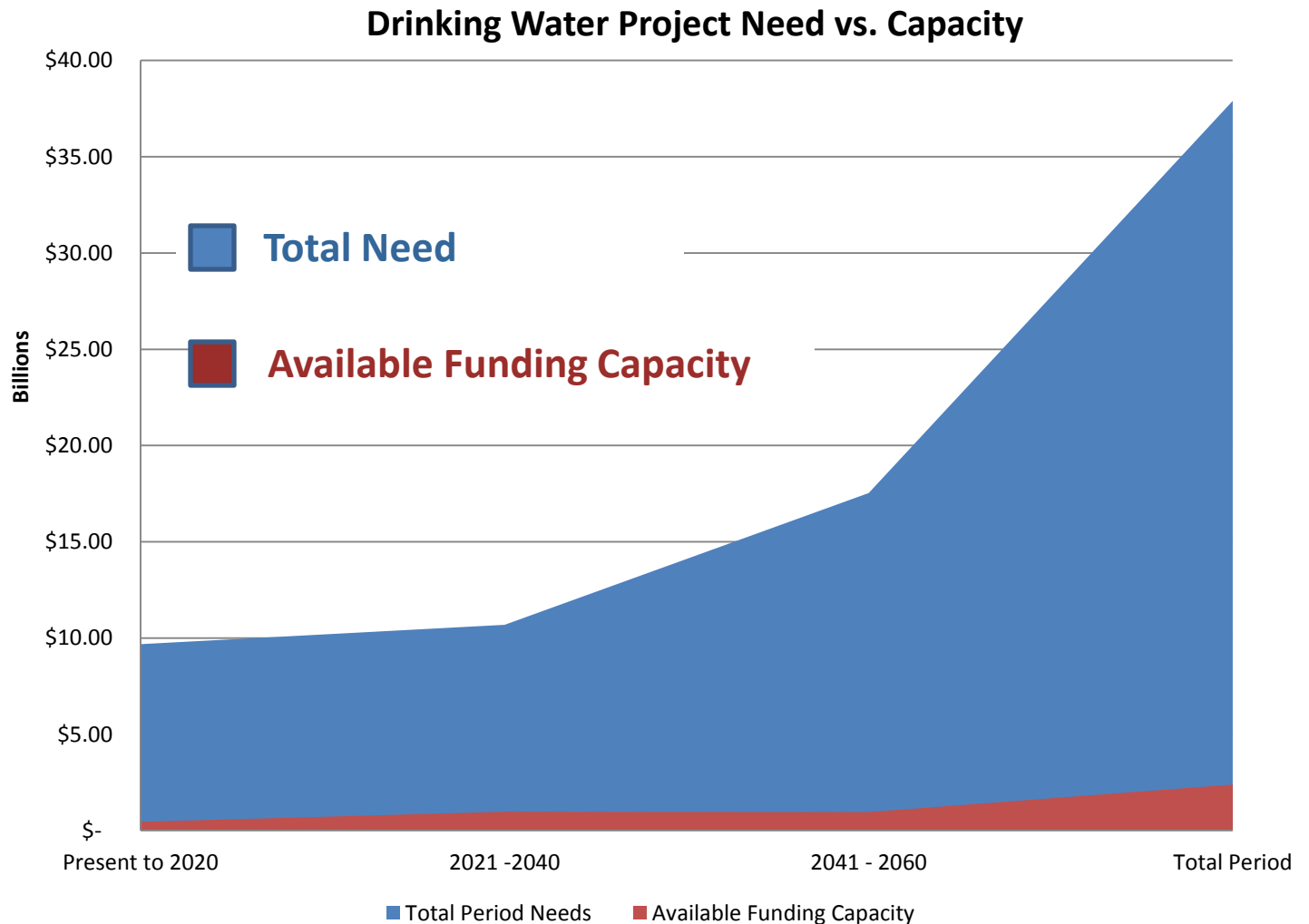
Water Quality & Quantity Monitoring

OCWP Priority Recommendation

Water Infrastructure Funding:

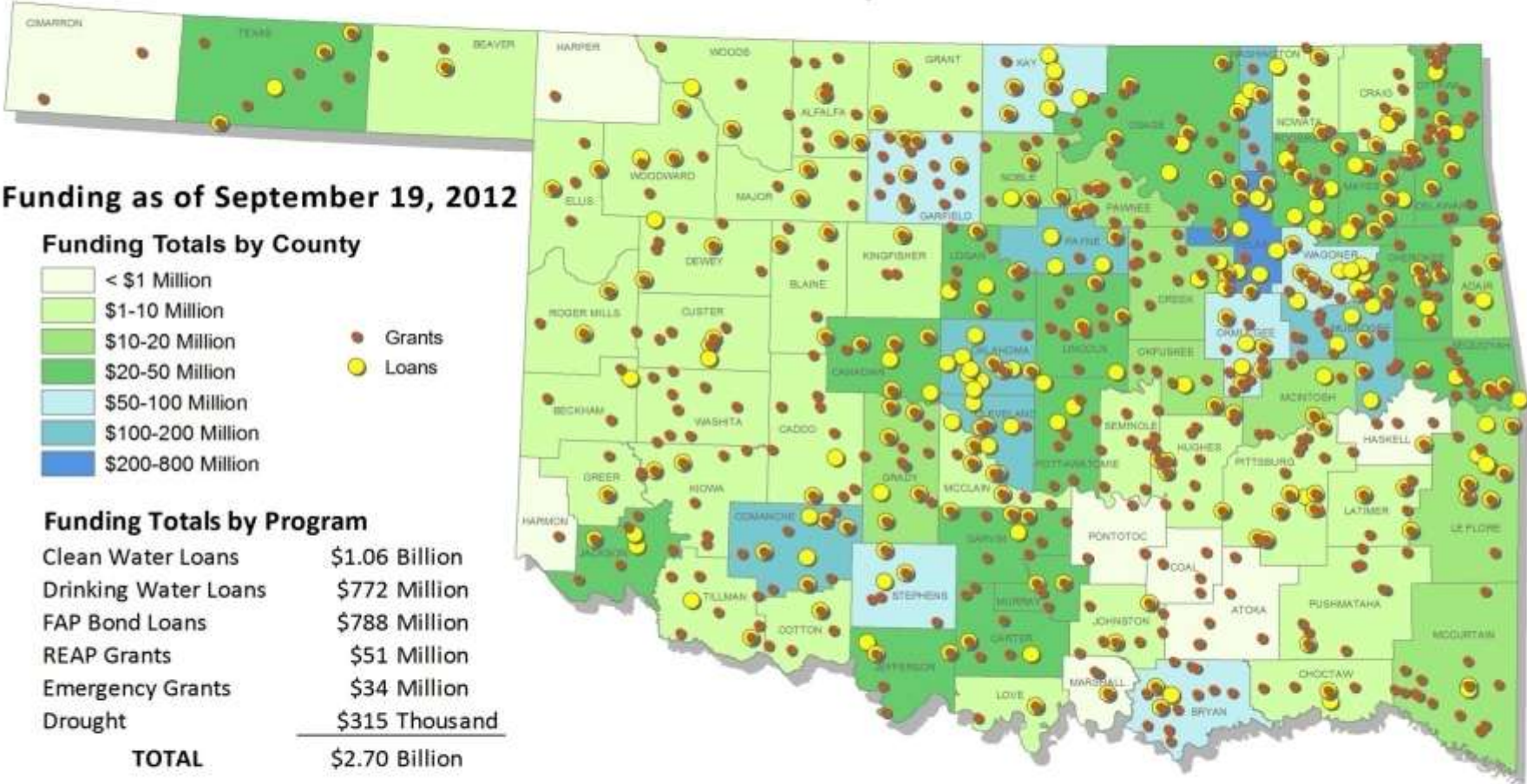
- Address Oklahoma's projected **\$82+ billion** water and wastewater infrastructure need by 2060.
- OWRB's 5 successful ("AAA") grant & loan programs can only satisfy 4-9% of this need
- Specifically address the needs of small-to-medium communities.
- **SQ 764 (57%Y-43%N): Water Infrastructure Credit Enhancement Reserve Fund**

Drinking Water Project & Infrastructure Funding



Financial Assistance Program

Loan and Grant Recipient Status



OCWP Priority Recommendation

Conservation, Recycling & Reuse:

- Identify innovative solutions to forecasted water shortages.
- **Voluntary** programs and policies, financial incentives, and education.
- **Water for 2060 Act sets statewide GOAL of consuming no more fresh water in 2060 than we consume today; advisory council to make recommendations.**

OCWP Conservation Analysis

Total Water Savings

M&I and Agriculture Statewide Demand Projections & Water Savings for Conservation Scenarios (AFY)

	2010	2020	2030	2040	2050	2060
Baseline	1,377,318	1,455,309	1,523,273	1,587,406	1,642,069	1,711,392
Scenario I	N/A	1,301,816	1,332,781	1,388,603	1,435,807	1,496,643
Scenario II	N/A	1,155,397	1,170,248	1,209,372	1,244,123	1,295,569

OCWP Conservation Analysis

What is the Impact on Hot Spots?

Gaps/Depletion
Mitigation
Hot Spots (



Source	Baseline Shortage Amount	Total & Percent Reduction from Baseline Shortage Amount			
		Moderate Level		Substantial Level	
SW	14,590 AFY	7,440 AFY	51%	8676 AFY	60%
AGW	12,070 AFY	6,036 AFY	50%	9036 AFY	75%
BGW	69,000 AFY	24,080 AFY	35%	61,320 AFY	89%

A red banner with a white border and a scroll-like effect on the left side, containing the text "OCWP Priority Recommendation" in white. The background of the slide is a dark blue map of water ripples.

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 to create a permanent statewide GW/SW monitoring network.**

OCWP Priority Recommendation

Water Supply Reliability:

- Ensure water availability for future growth through **fair and sustainable water allocation.**
 - aquifer yield studies
 - stream water allocation models
 - Further analysis of groundwater-surface water interactions, seasonal permitting, and conservation-oriented permitting approaches
- **Utilization of \$1.3 M/yr Gross Production Tax proceeds for OCWP implementation (including studies) extended through 2016.**

OCWP Priority Recommendation

Regional Planning Groups:

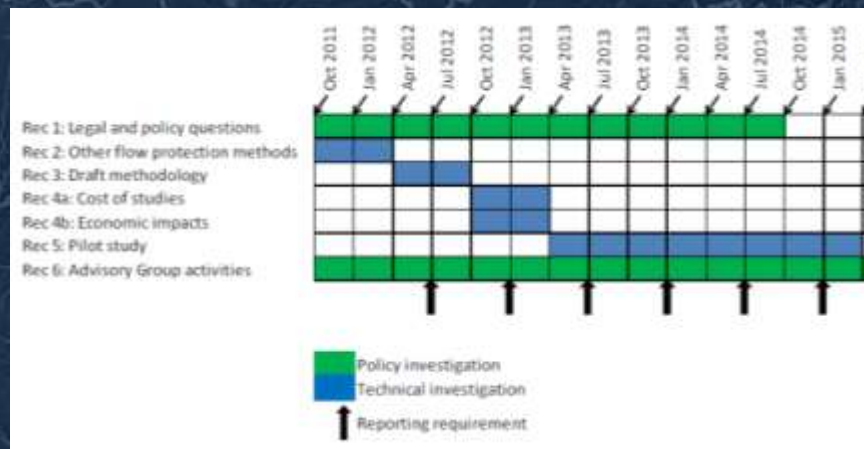
- Create **non-regulatory** Regional Planning Groups to assist in planning and implementing OCWP initiatives at the regional level.
- Consist of local stakeholders representing unique interests of each region.
- Develop next OCWP Update from the “ground-up.”



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.



Excess & Surplus Water:

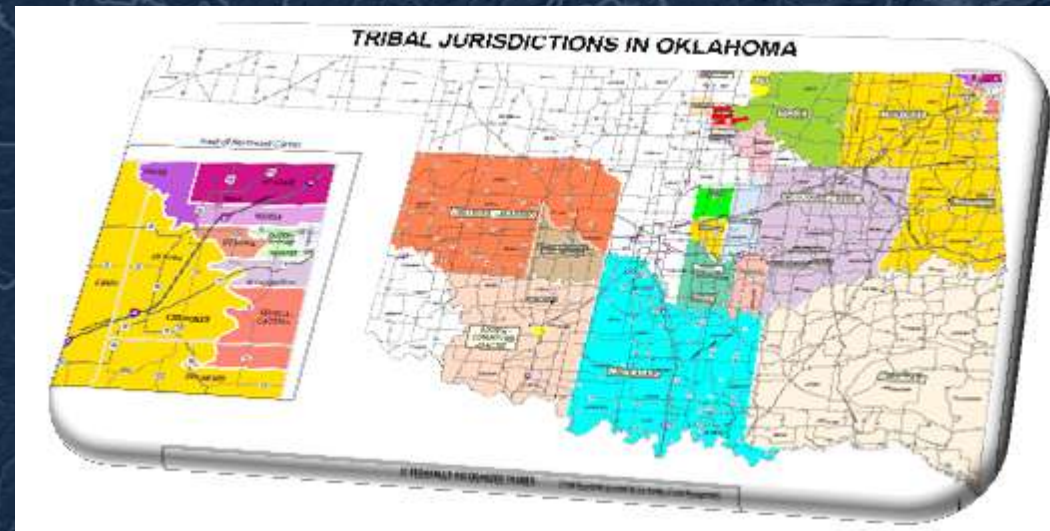
- Protect local water needs while addressing statewide demands.
- Definition and procedure required by statute.
- Ensure that the area of origin (planning basins) will never be made water deficient.




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**.



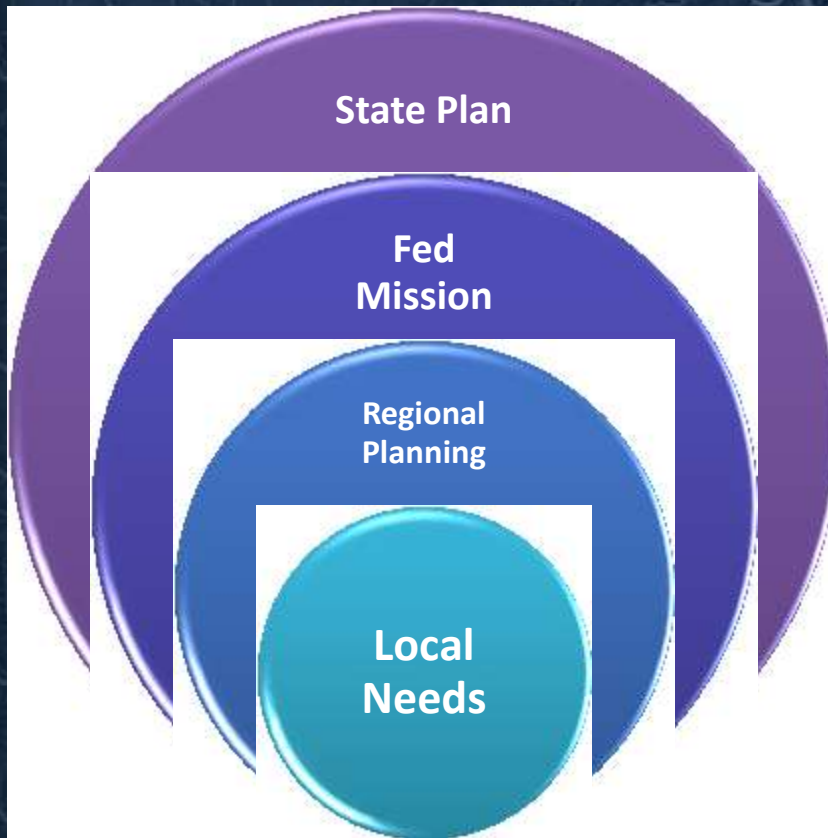


OCWP Success

Water for ALL Oklahomans through 2060 & beyond

- The Plan is for all Oklahomans so **all Oklahomans must take ownership.**
- **Constructive solutions**; build upon the Plan.
- **Increased unity** among water user groups.
- **More partnerships** between federal, state, local and tribal governments.
- Willingness to make **tough choices.**

New Paradigm: “Fund the Plan”



- Align disparate planning & prioritizing
- All resources & energy focused on one plan/state
- Coordinated planning → coordinated funding



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