

Funding of Oklahoma State Water Programs

Association of Western
States Engineers
June 9-11, 2013

Julie Cunningham
Planning & Management Division Chief
Oklahoma Water Resources Board



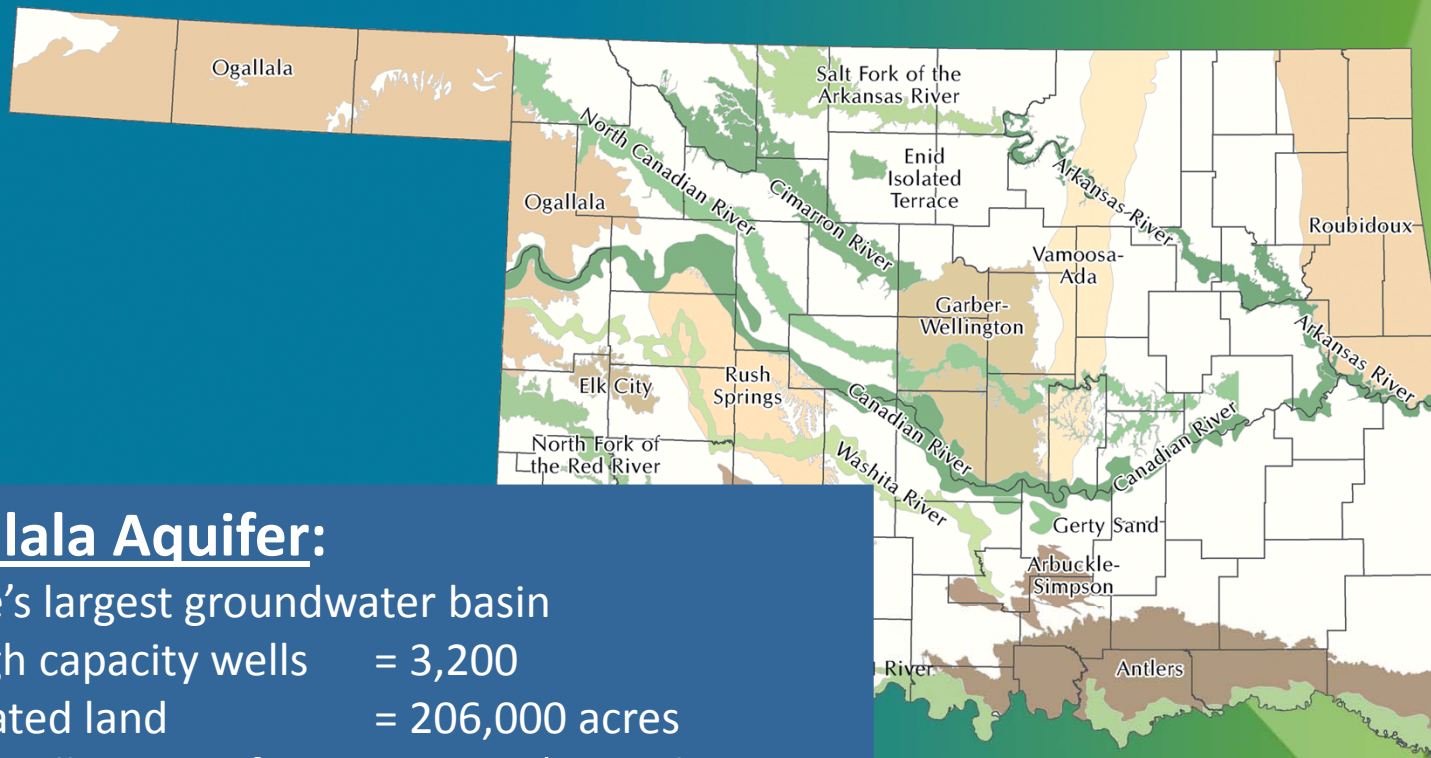
WATER FOR 2060
EFFICIENCY - CONSERVATION - RECYCLING - REUSE

Funding Topics

- Oklahoma Comprehensive Water Plan
- “Big 8” Water Plan Policy & Funding Recommendations
- Financing Ongoing State Water Management Program
- Tri-State Water Supply Partnership on Federal Policy

Oklahoma's Water Resources

- 23 major groundwater aquifers store 320 million acre-feet of water

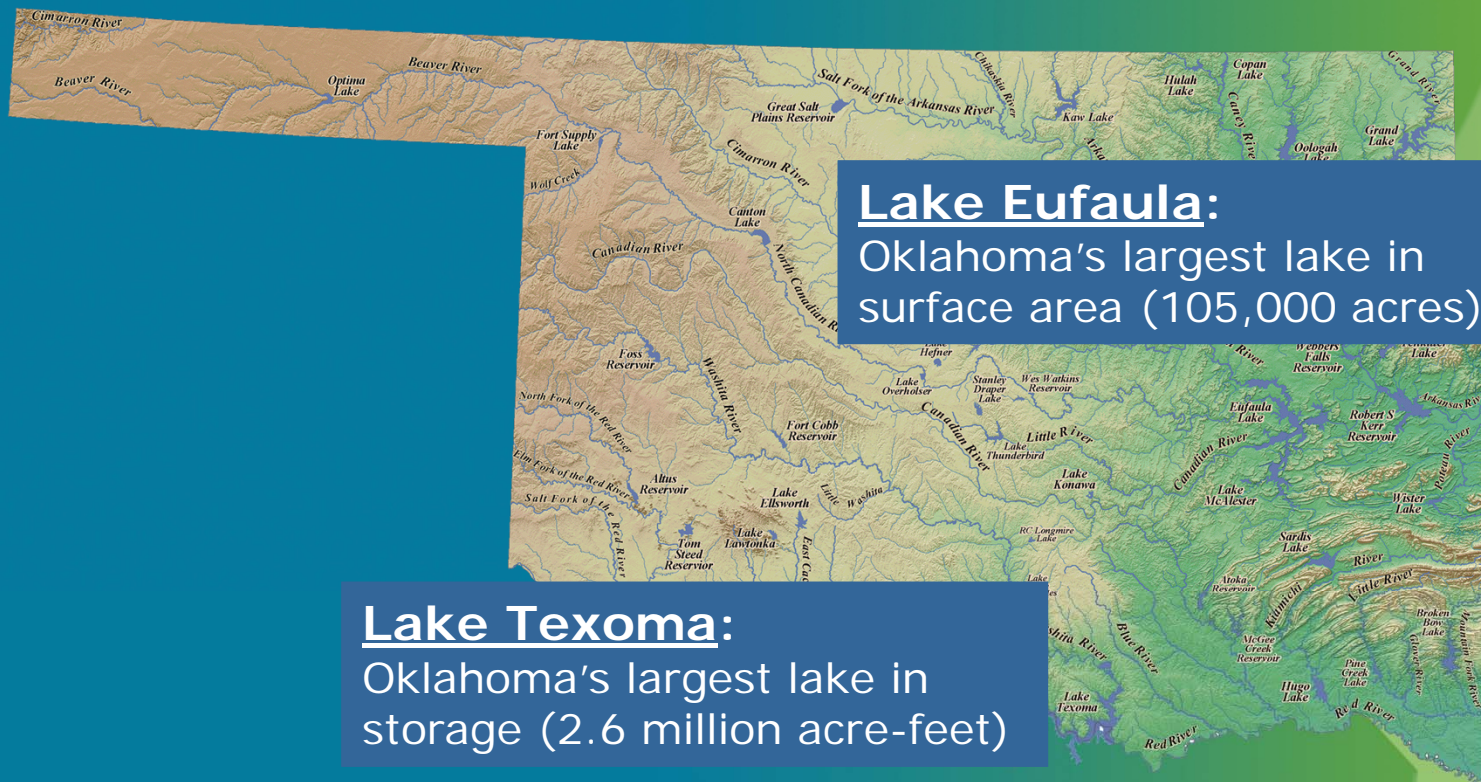


Ogallala Aquifer:

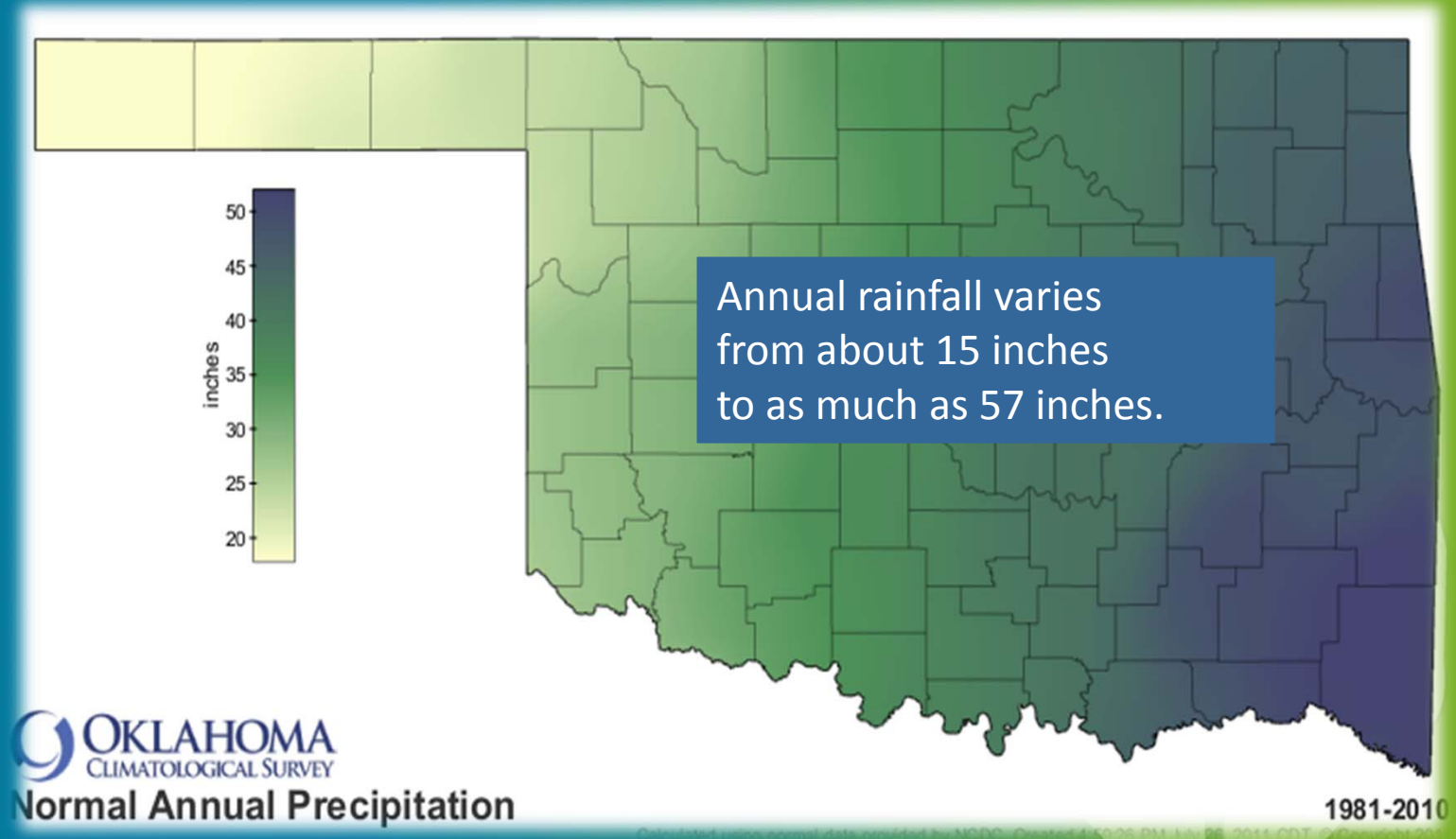
- state's largest groundwater basin
- # high capacity wells = 3,200
- irrigated land = 206,000 acres
- 86.6 million acre-feet in storage (enough to cover the entire state 2 feet deep)

Oklahoma's Water Resources

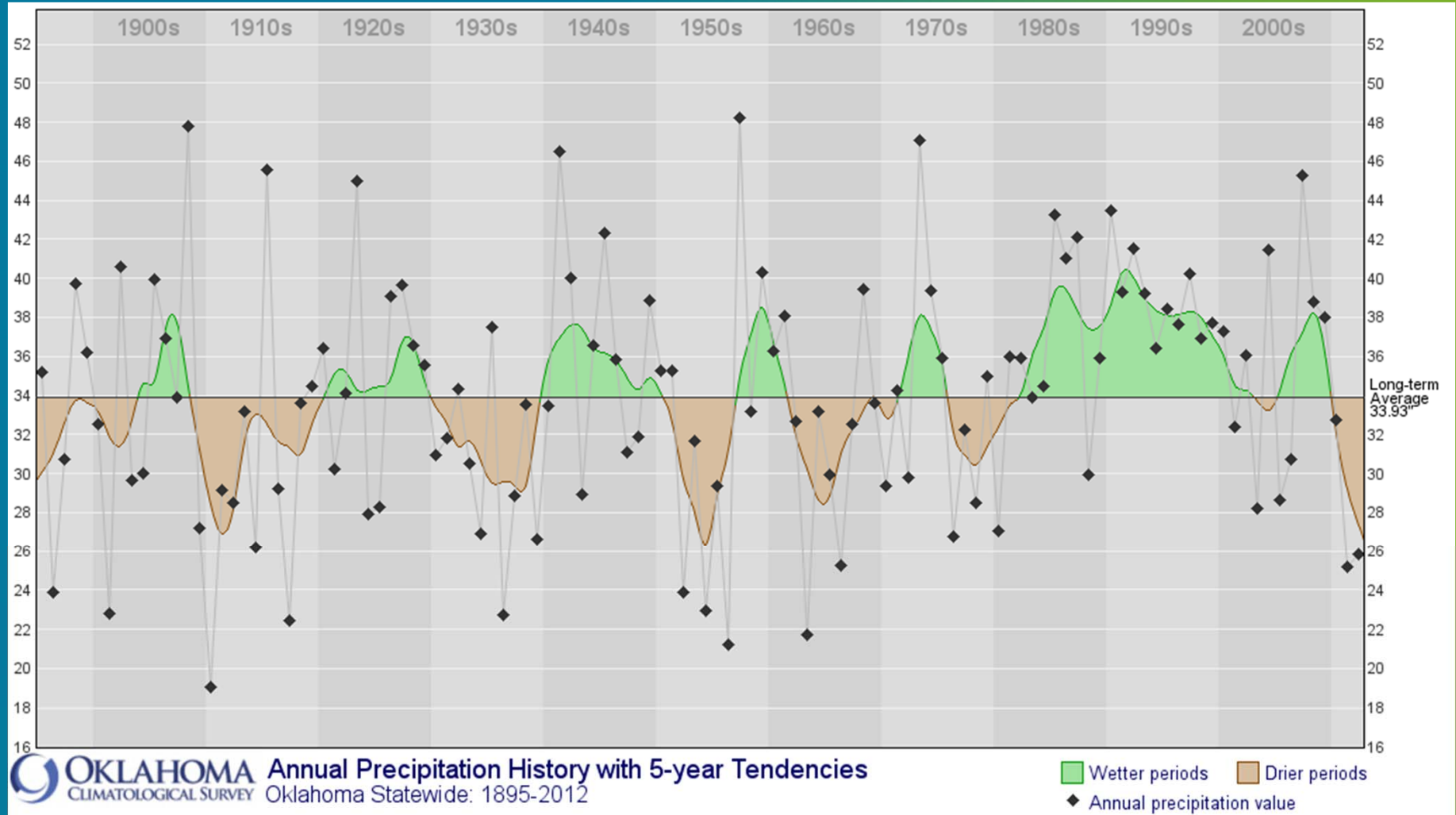
- 34 major reservoirs store 13 million acre-feet of water
- 4,300 public/private & watershed protection lakes



Oklahoma's Water Resources



Oklahoma's Precipitation History



2012 Ok. Comprehensive Water Plan



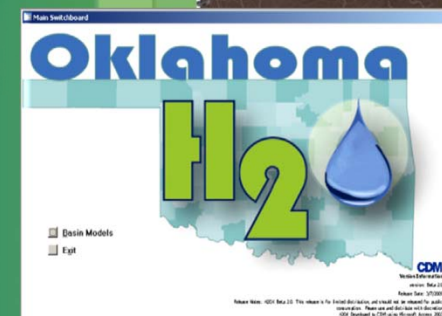
Blend extensive technical analysis and public input to formulate overarching water policy, implementation, and funding strategy to guide water management over the next 50-years.

- Characterize **demands** by water use sector
- Identify **reliable supplies** to meet forecasted demands
- Perform **technical studies** to evaluate emerging water mgmt. issues
- Undertake comprehensive **stakeholder engagement** to make recommendations regarding State water resource management
- Ensure water resources mgmt programs that **create reliability**
- Make **“implementable” recommendations** based upon technical evaluations and stakeholder input
- Identify **long-term funding needs** and **priorities**

2012 Ok. Comprehensive Water Plan

Outputs:

- **Unprecedented technical information/projections**
 - ✓ 13 regional reports, 82 basin demand analysis
 - ✓ 10 tech wrkgroups, over 100 experts, numerous special studies reports, decision tools
- **Unprecedented public involvement in policy development (OWRRI)**
 - ✓ 53 local/regional mtgs, 2,300 citizens, 30 wrkshops, Oklahoma Academy town hall
- **8 Priority Policy & Funding Recommendations**
- **Joint Legislative Committee, over 80 bills introduced**



2012 Ok. Comprehensive Water Plan Funding— 5 years, \$13.5 million

Funding Sources

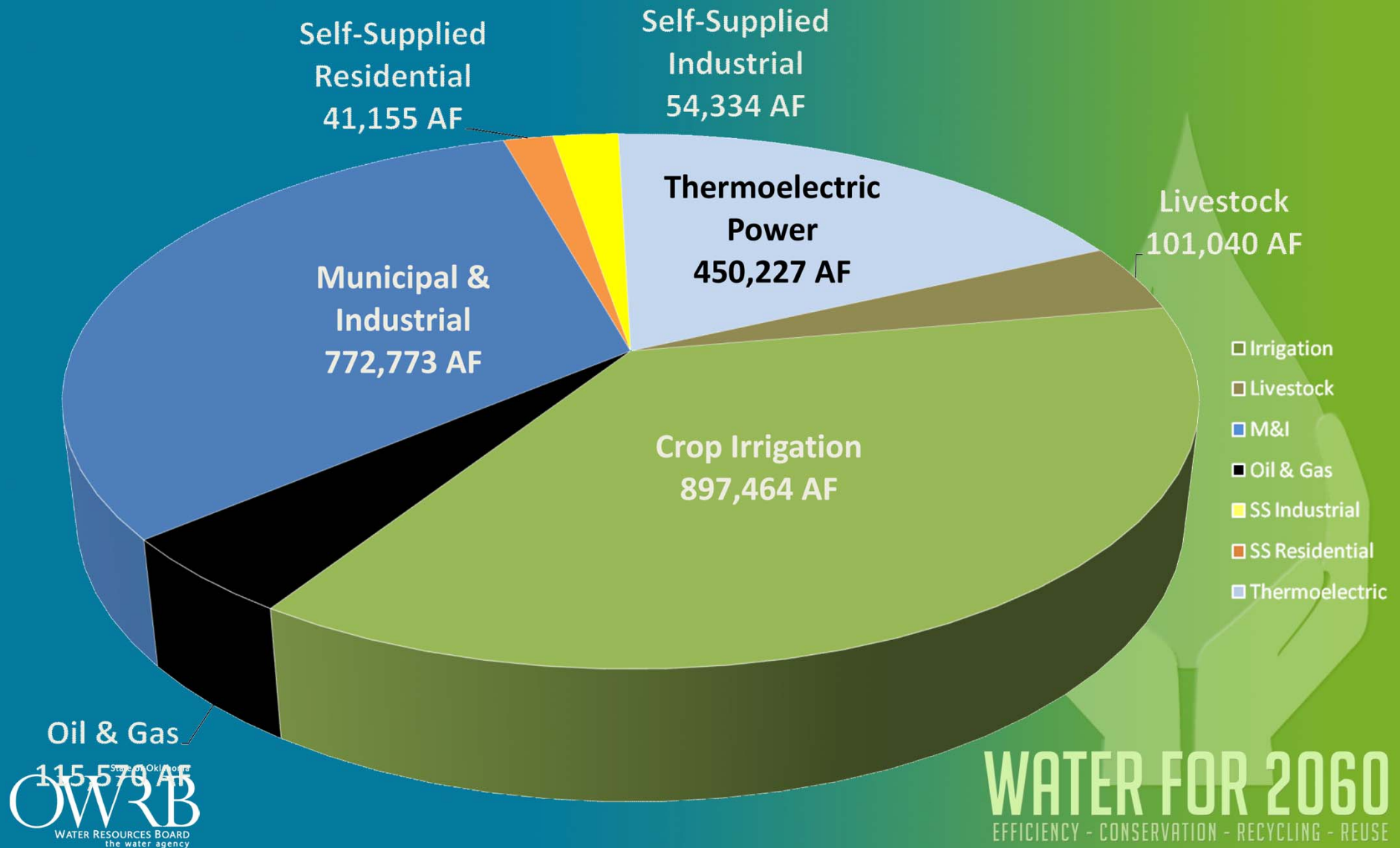
- FY 2006 Legislative Appropriation- Dedicated Gross Production Tax: \$6.5M (\$1.3M annually)
- US Army Corp \$6.0 M WRDA Authorization
 - ✓ Emphasized our concept of Water Plan as the state's “clearinghouse” for funding priorities.
 - ✓ Asked Tulsa District and HQ to ensure Water Plan sets goals for Corp funding decisions.
 - “Public Assistance to States” grants
 - “General Investigations” grants: Feasibility Studies for S.E. Oklahoma and Washita R. Projects

2012 Ok. Comprehensive Water Plan Funding— 5 years, \$13.5 million

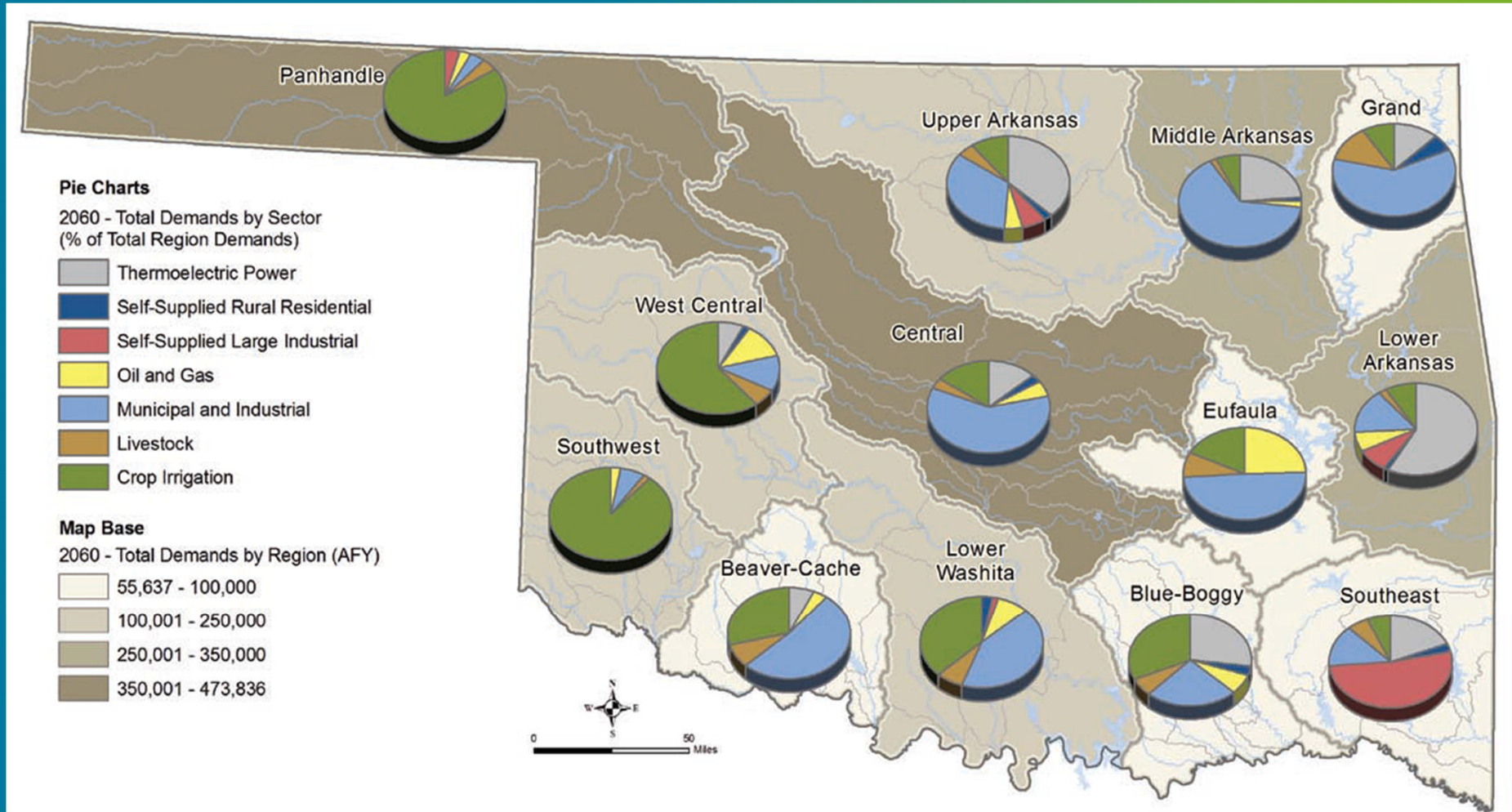
Funding Sources, continued

- US Bureau of Reclamation Water Smart Grant-Climate Studies
- USGS 50/50 Cooperative Program Matching Funds
 - ✓ Garber-Wellington GW availability study, historical water use, drought comparison report, development of Statewide StreamStats
- Oklahoma Water Resources Research Institute- 50/50 Matching Funds, \$1.2M in-kind

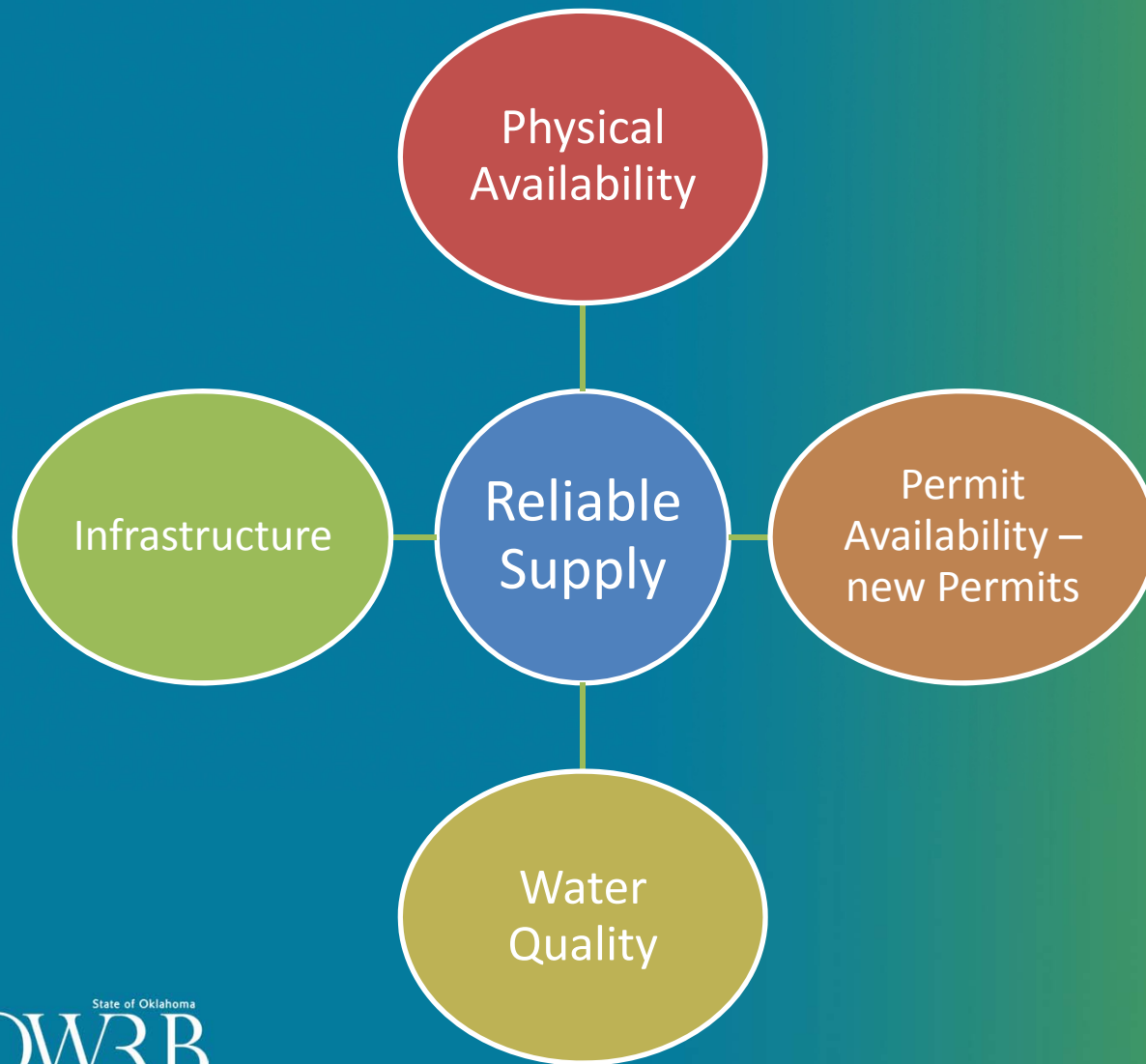
2060 Statewide Water Demand



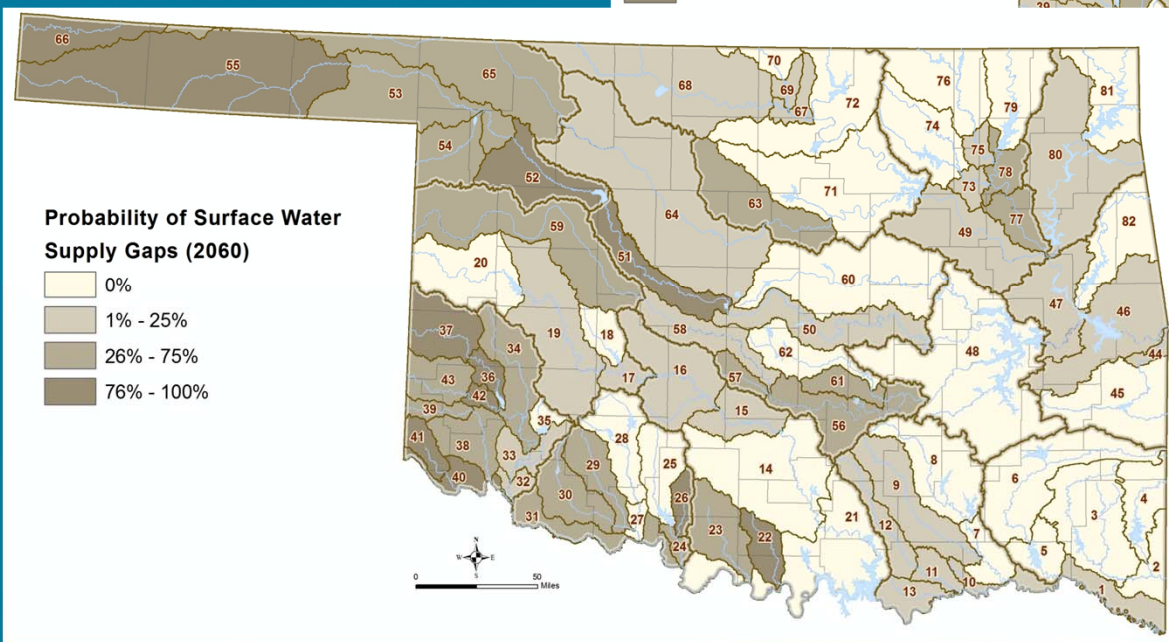
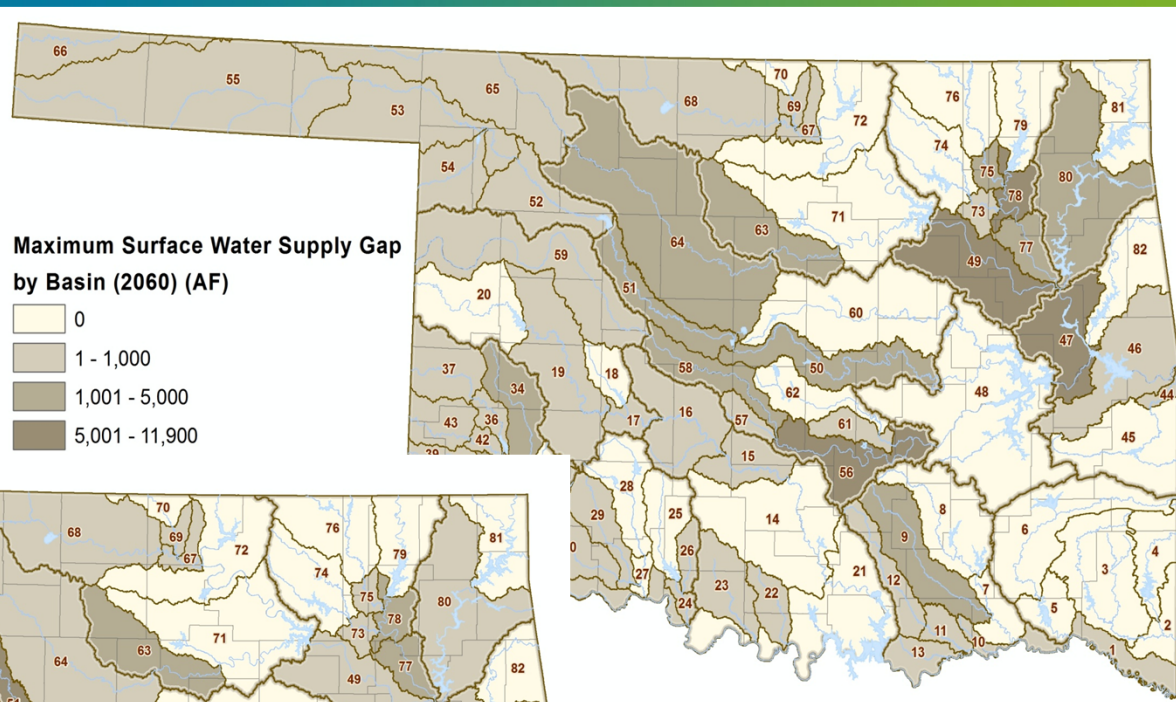
Demand Projections



Water Availability Projections



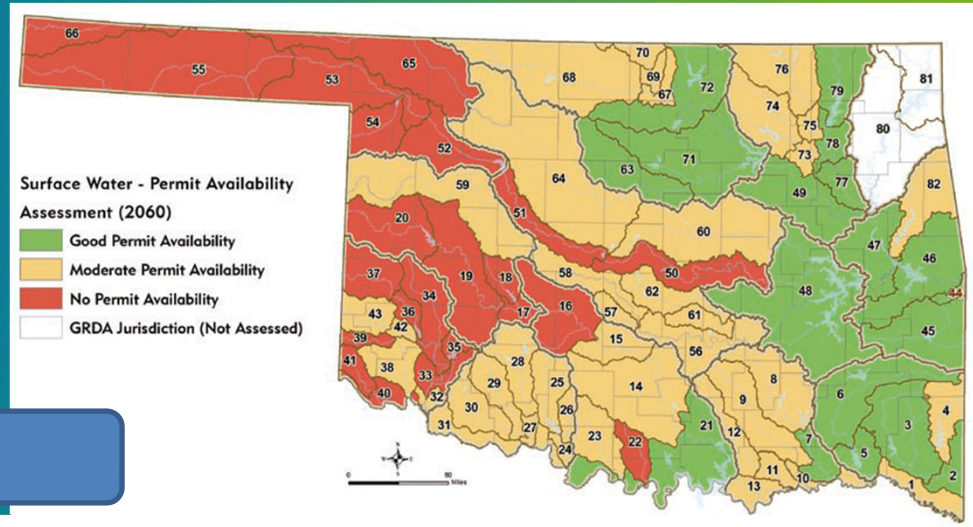
1. Physical Supply Availability— 2060 Surface Water Gaps



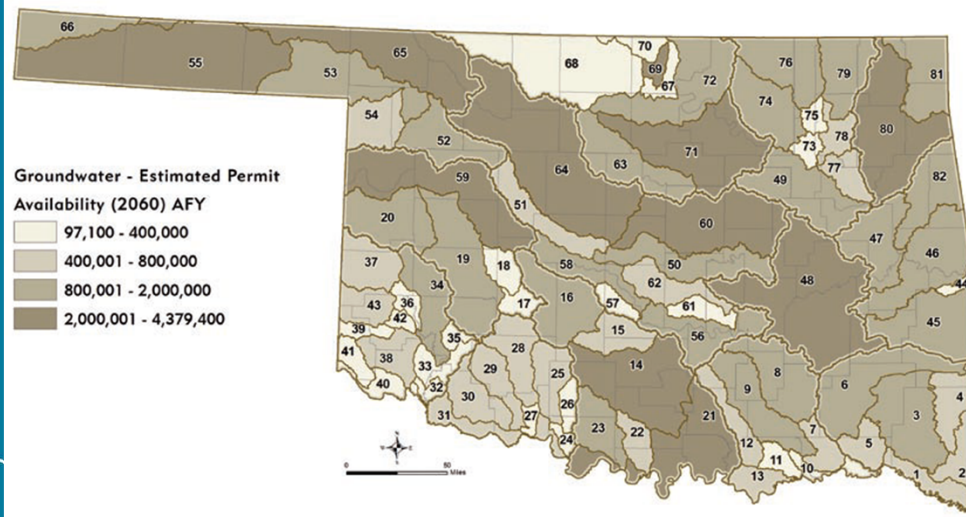
WATER FOR 2060
EFFICIENCY - CONSERVATION - RECYCLING - REUSE

2. Permit Availability Analyses- 2060

Surface Water



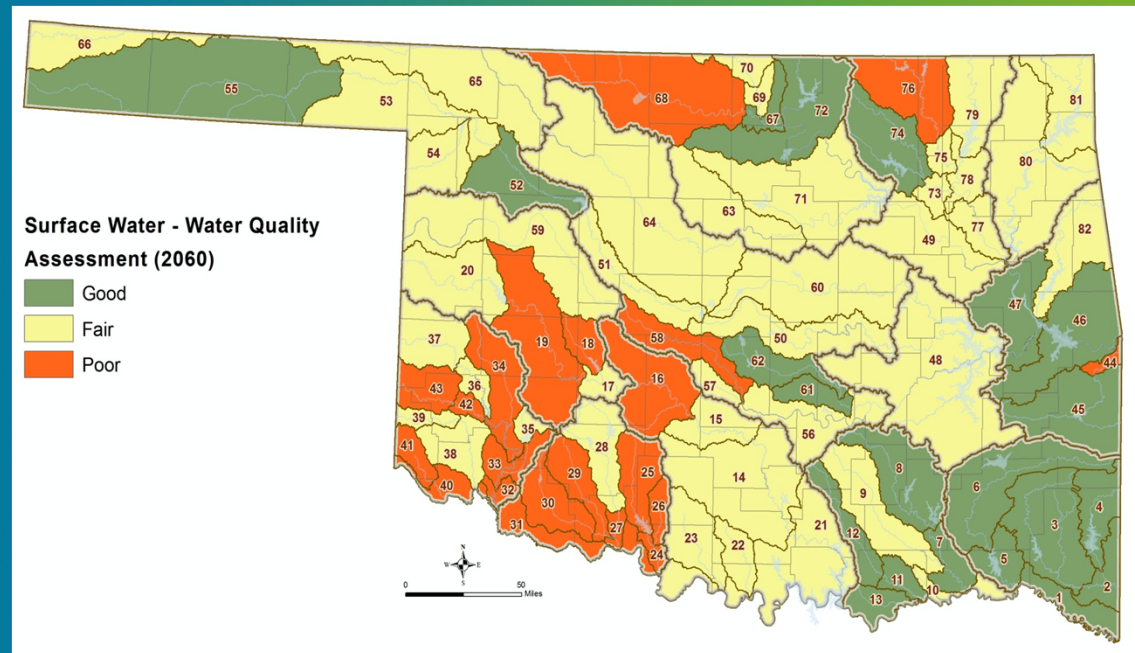
Groundwater



3. Water Quality Availability Analysis

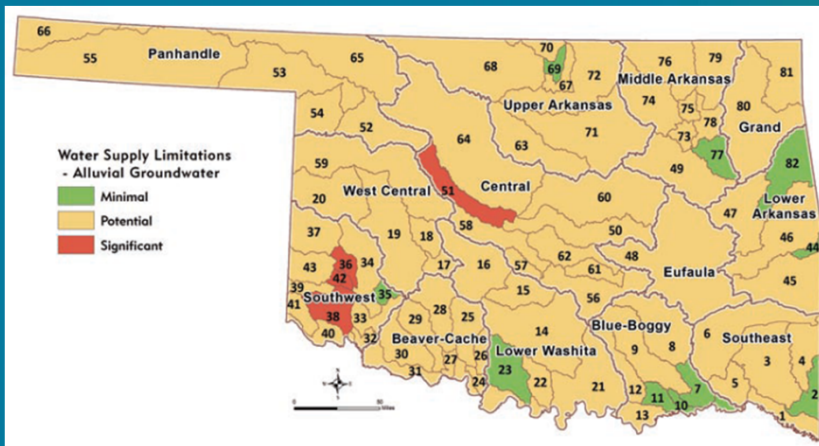
Data & Methods:

- surface water only; lack of data for GW
- “WQ condition” score determined for all basins
- streams and lakes evaluated separately
- assessed trends in designated beneficial uses for impaired or threaten waters (e.g. turbidity, nitrogen, phosphorus, turbidity, chlorophyll-a (lakes), PPWS, and Ag uses)

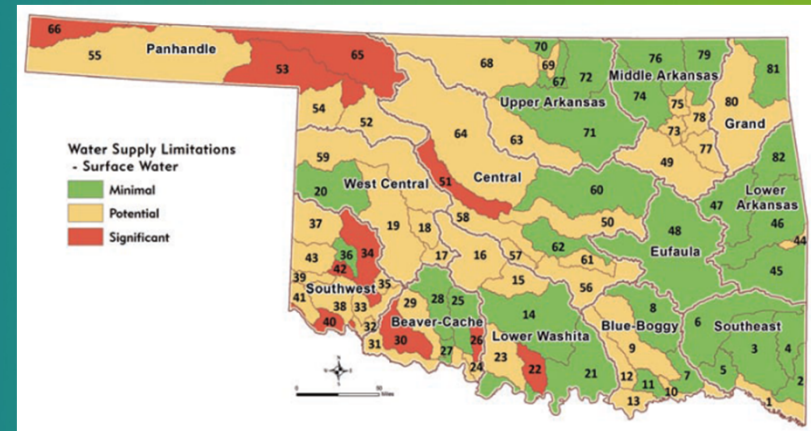


All Supply Limitations

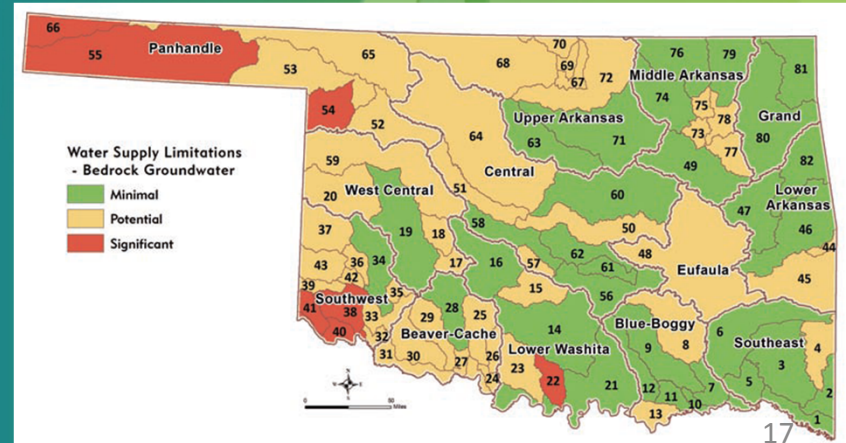
Alluvial Groundwater



Surface Water



Bedrock Groundwater



Water Supply Options, Opportunities

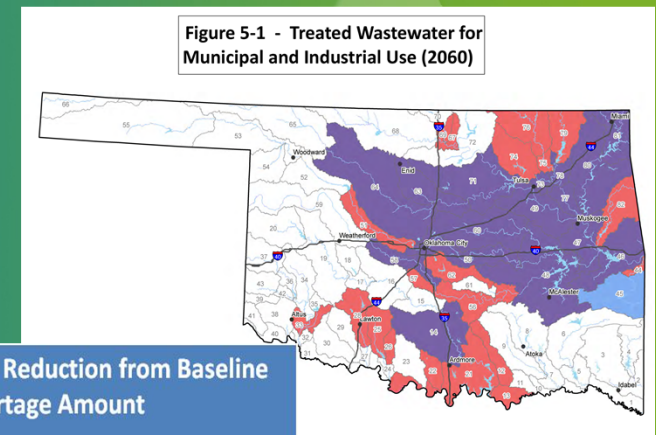
SUPPLY OPTION CATEGORIES
DEMAND MANAGEMENT
OUT OF BASIN SUPPLIES
ADDITIONAL RESERVOIR STORAGE
INCREASE SUPPLY FROM SURFACE WATER
INCREASE SUPPLY FROM GROUNDWATER

Based upon results discussed, a mid-level analysis of potential options and their associated effectiveness was performed in all 82 basins

Expanded Options & Opportunities Analysis Reports

Generally more statewide in perspective

1. Municipal & Agri. Conservation- Efficiency and Reuse, % demand /cost reduction
2. Marginal Quality Water
3. Artificial Recharge
4. Reservoir Viability

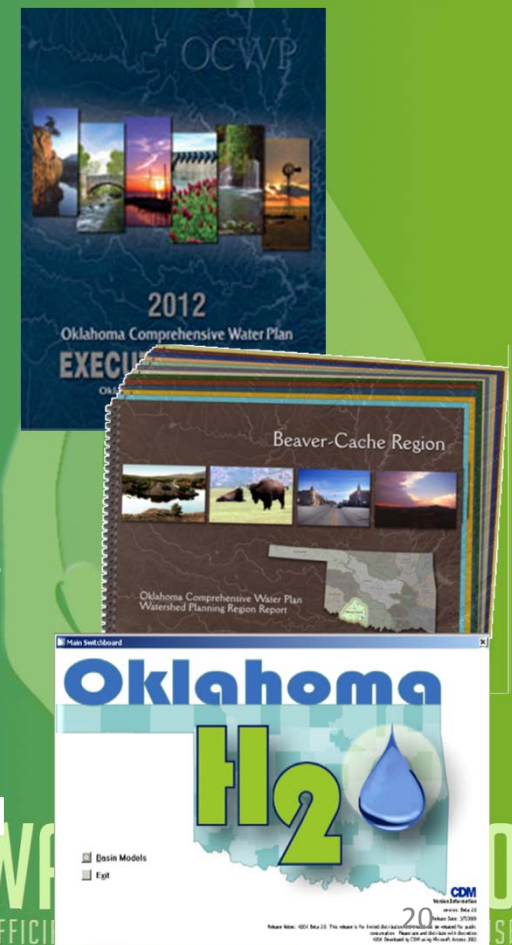


Source	Baseline Shortage Amount	Total & Percent Reduction from Baseline Shortage Amount			
		Moderate Level		Substantial Level	
SW	14,590 AFY	7,440 AFY	51%	8676 AFY	60%
AGW	12,070 AFY	6,036 AFY	50%	9036 AFY	75%
BGW	69,000 AFY	24,080 AFY	35%	61,320 AFY	89%

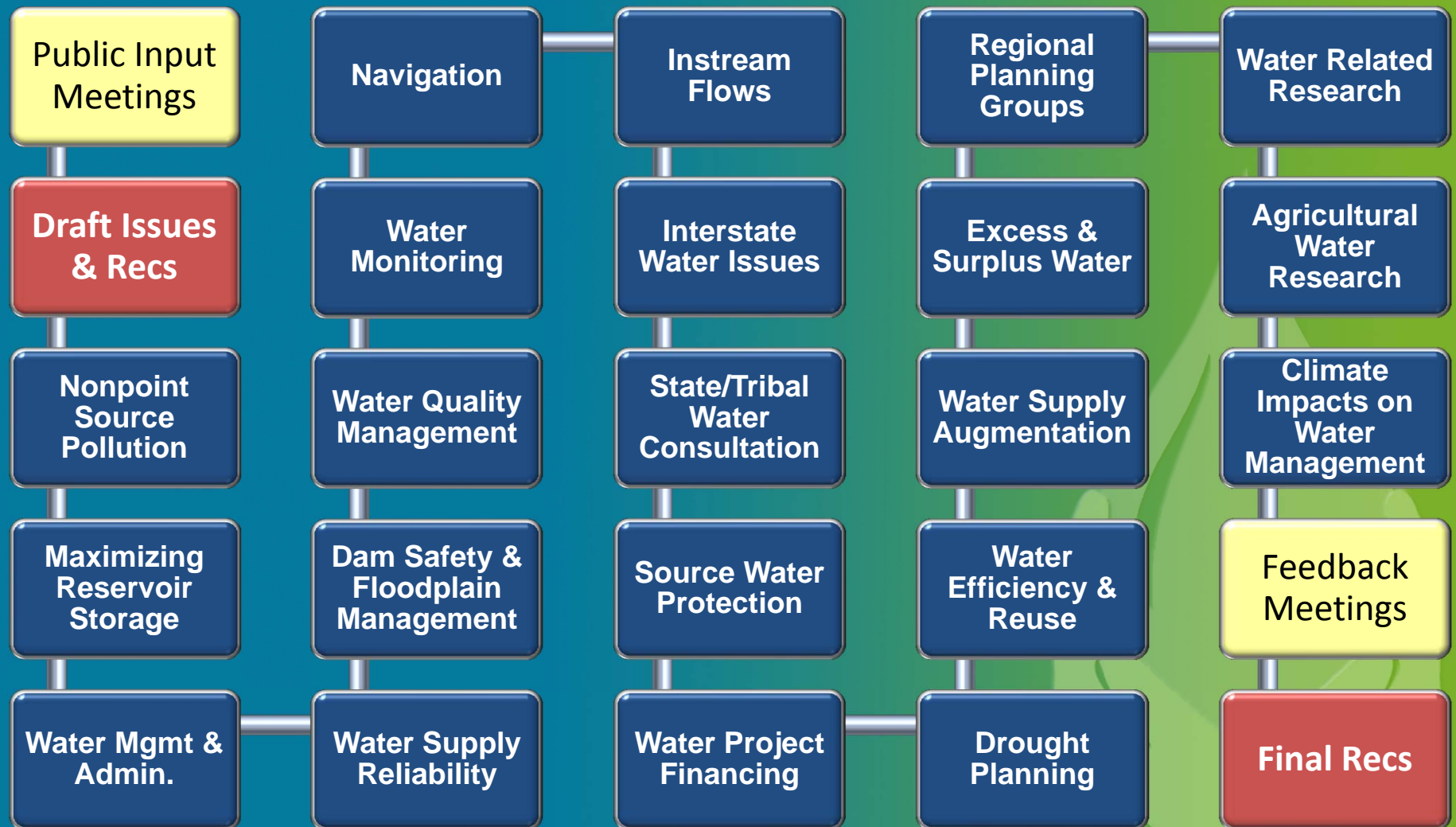
2012 Ok. Comprehensive Water Plan

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Water Policy Development



OCWP Implementation

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**

- Much interest from legislature and Governor
- Joint Committee held several sessions to hear recommendations in detail during summer 2012
- Over 80 water bills proposed

OCWP Priority Recommendation

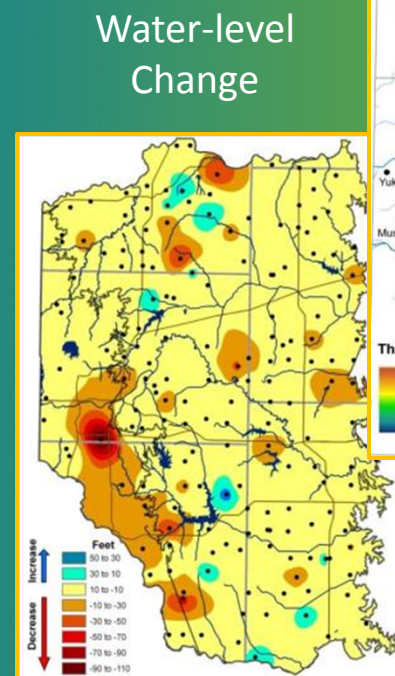
Water Supply Reliability:

- Ensure water availability for future growth through fair and sustainable water allocation
- Complete all aquifer yield studies and 20-yr updates
- Complete all stream water allocation models
- further analyze various water rights management approaches (e.g. conj. mgmt., seasonal permitting, res. yield protection, conservation in GW allocation, etc.)
- **\$1.1M/yr. Gross Production Tax proceeds extended for water planning through 2016.**

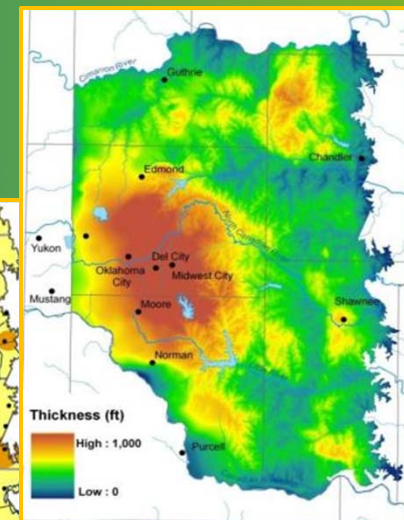
Model Analysis & GIS Mapping Products

Location-specific analysis

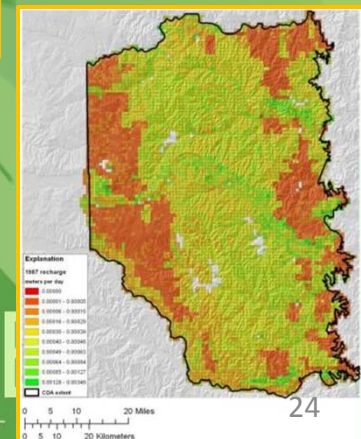
- Flow model and quantification of Maximum Annual Yield/Equal Proportion Share
- Offer robust aquifer characterization, opportunity for forecasting and “what-if” assessment
- Well site location
- Contamination flow prediction
- Assessment of potential GW/SW water interactions and effects on reservoir yield
- Assessment of drought affects by locations



Aquifer Thickness



Recharge Areas



WATER
EFFICIENCY -

USE

Stream Water Allocation Models

Location-specific analysis

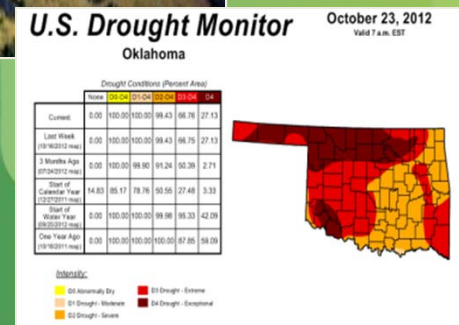
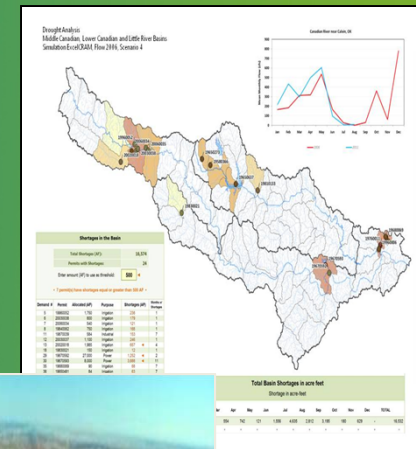
- Surface water availability at any location
- Water reliability on a monthly basis
- Evaluate new permit applications
- Domestic use impacts

Evaluate water policy implications

- Inter/intra basin transfers
- Inter-state Compact
- In-stream flow requirements

Management during low flows/drought

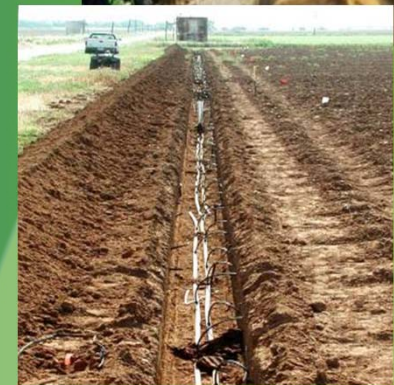
- Identify potential shortages
- Address claims of interference
- Pre-drought warning



OCWP Priority Recommendation

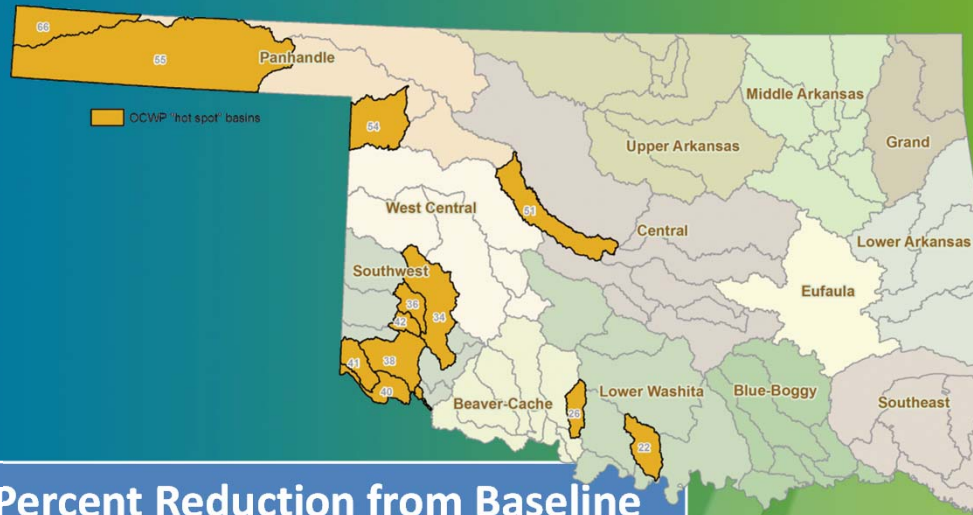
Conservation, Recycling & Reuse:

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



OCWP Conservation Analysis

What is the Impact on 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%
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BGW	69,000 AFY	24,080 AFY	35%	61,320 AFY	89%

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.”
- **2012 Bill Failed, 2013 HB 965 restructured OWRB from Congressional Districts to regional scheme. Passed by 1 vote**

OCWP Priority Recommendation

Instream/Environmental Flows:

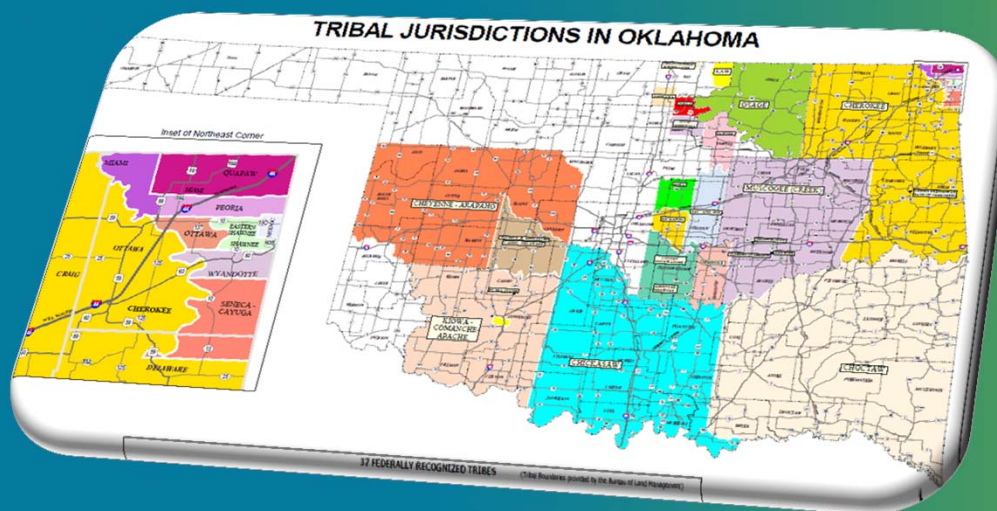
- Recognize nonconsumptive water needs and **supporting recreational and local economic interests**
- Assess the suitability and structure of a potential instream flow program for Oklahoma
- **2013 Corp of Engineers PAS funding stakeholder meetings**



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**.

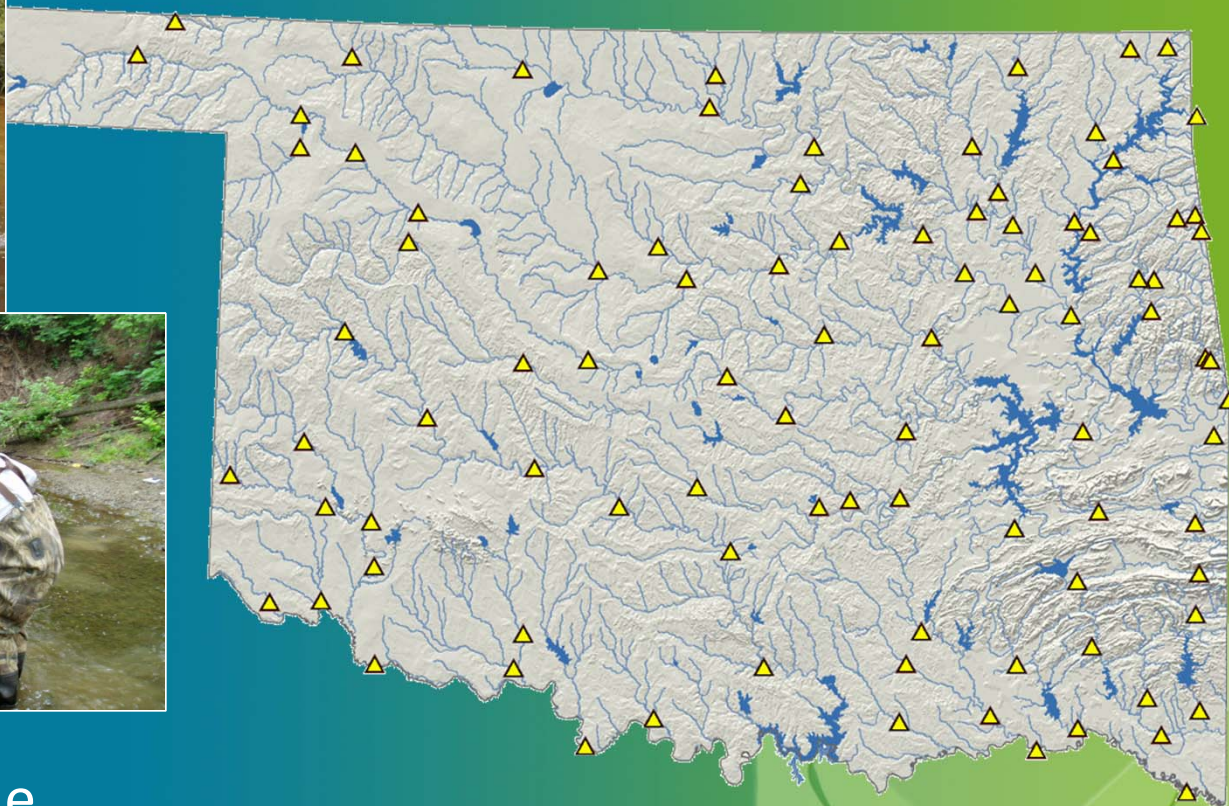


OCWP Priority Recommendation

Water Quality & Quantity Monitoring:

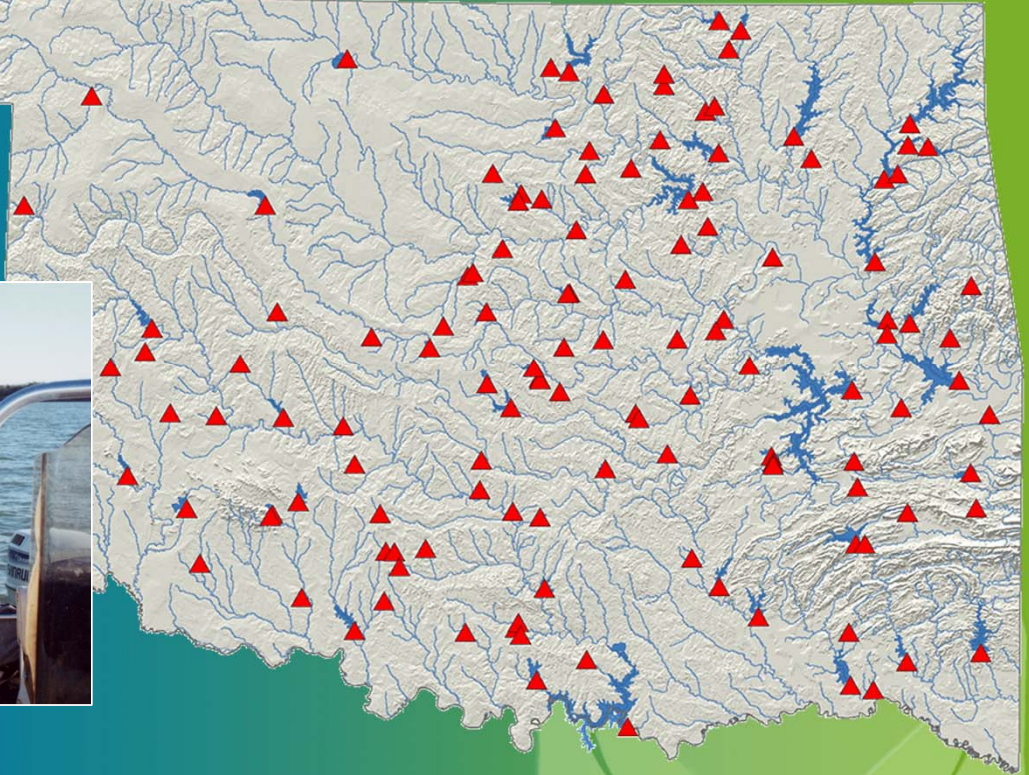
- Better data for **improved decision-making**.
- Restore funding for statewide water quality and quantity monitoring program.
- Create the first comprehensive GW monitoring program.
- **\$1.5 M annual appropriation increase to create a permanent statewide GW/SW monitoring network.**

Stream Monitoring Upgrades



- 103 Sites statewide
- 5 – 10 New stream gages
- More frequent site visits and addl. parameters

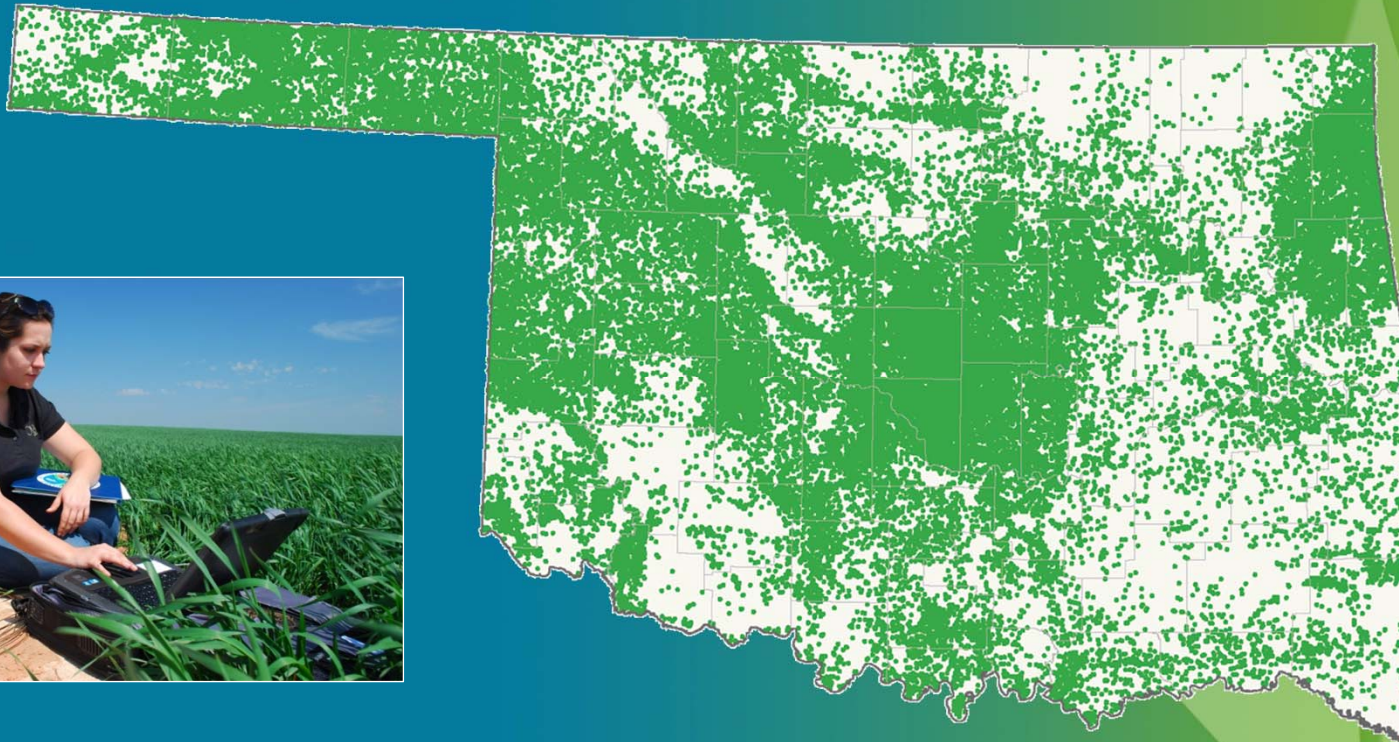
Lake Monitoring Upgrades



- ~130 Lakes sampled statewide
- increased frequency and additional parameters

New Statewide Comprehensive Groundwater Monitoring Program

Potentially 2,000 of the 140,000 existing wells may comprise the new state monitoring network



OCWP Priority Recommendation

Water Infrastructure Financing

- 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; passed 2013 session**

OCWP Supporting Recommendation

Water Emergency/Drought Planning

- Update Oklahoma Drought Management Plan
- New training on emergency planning for municipal water system operator training program
- Water provider incentives and technical assistance for planning and swift response
- HB 1923—New \$3 M Emergency Drought Relief Fund—upon Gov. declaration, new Emer. Drought Commission.
- BOR: \$50,000 Emergency Drought Information tool

OCWP Success

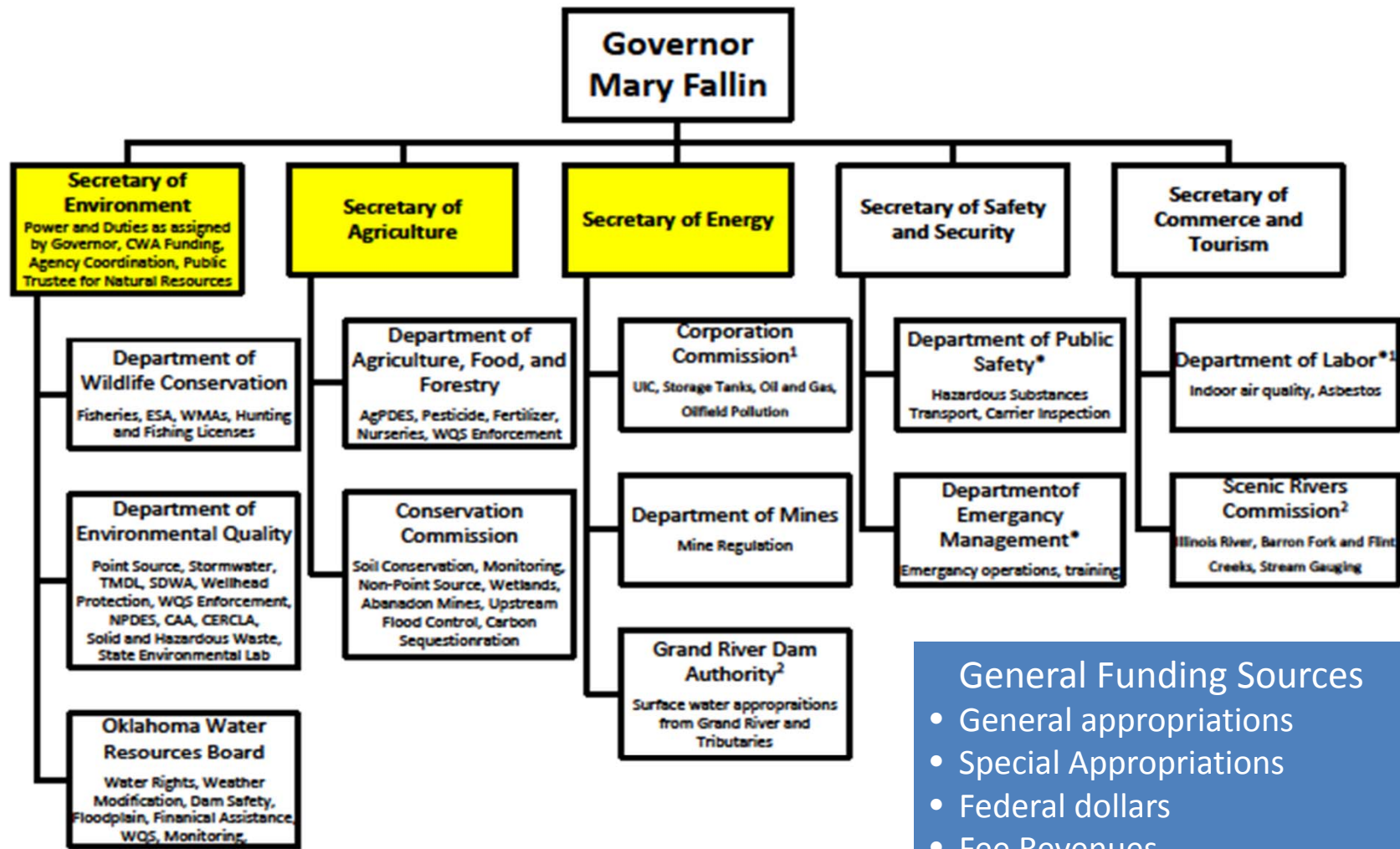
Water for ALL Oklahomans through 2060 & beyond

- 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.**

Financing Ongoing State Water Management Programs

Oklahoma's Environmental Agencies by Cabinet Area

27A O.S. §1-3-101



- General Funding Sources**
- General appropriations
 - Special Appropriations
 - Federal dollars
 - Fee Revenues

*Environmental Agency of limited jurisdiction, ¹Agency ran by elected official(s), ²Not specifically defined as a environmental agency (Title 82)
Yellow shaded cabinet officials are member of the Environmental Sub-Cabinet

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

Planning & Management Division

Water Rights Administration

- New Annual GW permit admin. fee, \$25/yr
- Increased application, change of ownership, and amendment fees by \$5 (\$55 to \$3,000)
- Doubled “unauthorized use” fee, Temporary permit from \$205 to \$410 for each offense
- New Online Temporary permit expedites process (same-day turnaround) and encourages compliance
- Annual water use reporting improvements (e.g added second notice for report/fee submittal)

Planning & Management Division

Dam Safety Program

- 2010 Increased application and annual administration fees— from \$100-\$500 to \$200-\$10,000 (based on project cost)
- New inspection report review fee for “high” and “significant-hazard potential” dams.
 - (1) Significant hazard dams - \$300 ea 3 years
 - (2) High hazard dams - \$350 each year;
 - Late reporting fee - \$50.00
- Result: allowed State to increase engineering reviews and inspections/outreach

Planning & Management Division

Floodplain Management

- Cooperate with Oklahoma Floodplain Managers Association
- FY 2012 initiated new **FEMA Cooperating Technical Partners (CTP) Program**- provides communities with local engineering (floodplain mapping) services at 75% cost match. **Approx. \$4M**
- FY 2012 initiated new **FEMA CTP Discovery Program**—OWRB and engineering firm work with communities in flood prone basins to identify/prioritize issues/mapping needs for FEMA funding. **Approx. \$1.5M**
- FEMA Region 6 “turn-back” funds

Planning & Management Division

Water Well Drillers Licensing Program

- Cooperate with Oklahoma Water Well Drillers Advisory Council
- New Admin. **fine schedule** and **citation system**:
 - provide consistency and streamlining in enforcement of specific construction rules.
 - Expedites hearing process
- Tightened **license renewal deadlines** and added **late fee**.
- Result: Increased GW protection and evened playing field for companies following rules

Financial Assistance Division

Assist communities and rural water districts in financing water and wastewater infrastructure improvements

- \$3 billion in loans and grants to date

OWRB
Loan and
Grant
Programs

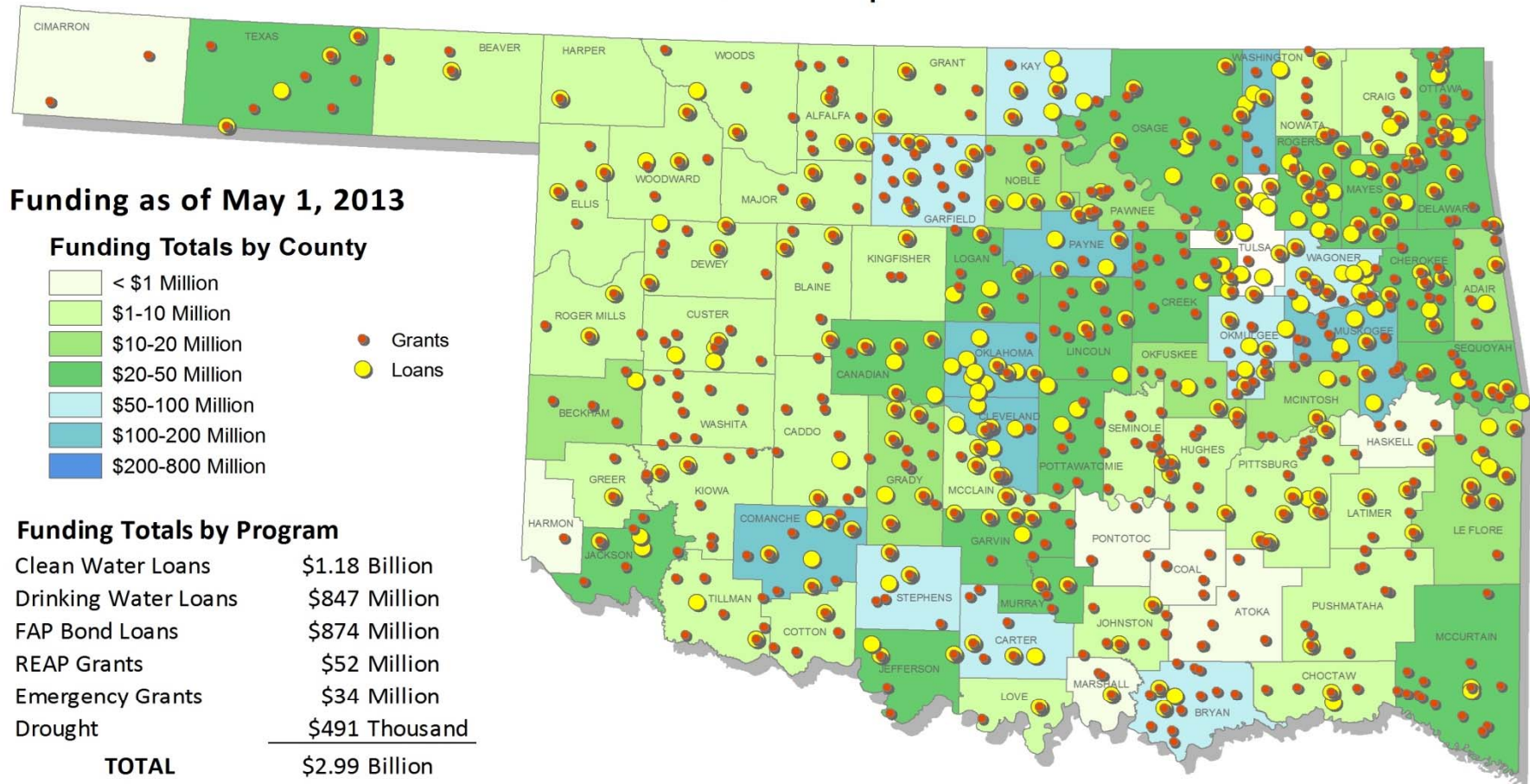
- Clean Water State Revolving Fund Loans
- DW State Revolving Fund Loans
- State Revenue Bond Loan Program Loans
- Emergency Grants
- Rural Econ. Action Plan Grants

Funding Sources—

- General appropriations
- Special Appropriations
- Federal dollars
- Debt Issuance
- Loan Repayments
- Interest on Bond Loan Program Reserve

Financial Assistance Program

Loan and Grant Recipient Status



TOTAL SAVINGS \$1 Billion

Oklahoma Funding Agency Coordinating Team



- Fed. and state water financing agencies—drinking water, sewer, and “green” projects for Oklahoma public entities
- Meet quarterly to identify best funding source, cross-train funding agencies, adopt streamlined application/guidance

Members	
Oklahoma Water Resources Board	USDA Rural Development
Oklahoma Department of Commerce	Oklahoma Council of Governments
Indian Health Service	Community Resource Group
Oklahoma Department of Environmental Quality	

Infrastructure Investment Impacts

- Economic growth
- Quality of life
- System sustainability
- Increased property values
- Reduced health risks
- Energy cost savings

Analysis Shows each additional:

- \$1 in Construction Increases Economic Output by \$2.37
- \$1 million in Construction creates 25 jobs

Tri-State Water Supply Partnership on Federal Water Policy

Tri-State Water Supply Partnership

- Texas Water Development Board, Oklahoma Water Resources Board, Kansas Water Office
- Focus on supply issues related to WRDA and U.S. Army Corp facilities, of which 75% of storage is located in the SW Division
- GOAL: Elevate water supply as a priority in the Corp's budgeting and programming
- Identified several legislative provisions to support state water supply planning and implementation through WRDA.
- Met with Congressional Delegation in D.C. June 2013

Insights

- Actively coordinate ongoing **education** and **partnership** with public and legislators
- **Offer solutions** for water management and **quantify costs** for various solutions
- **Partner** with federal, state, local entities and enlist them to help **piece together funding** sources
- **Long-term Plan** allows focus to remain on goals developed by the public while minimizing appearance of ulterior motive or political pressure

Questions?

State of Oklahoma
OWRB
WATER RESOURCES BOARD
the water agency

Oklahoma COMPREHENSIVE
Water
PLAN

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