

OCWP

Oklahoma Comprehensive Water Plan

OCWP Implementation Year 1 Review

OWRB Meeting

June 18, 2013

J. D. Strong
Executive Director

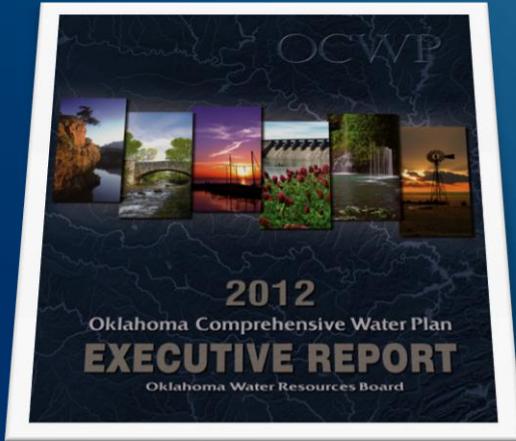
State of Oklahoma
OWRB
WATER RESOURCES BOARD
the water agency

Defining Success:

Original Goals of the 2012 OCWP Update

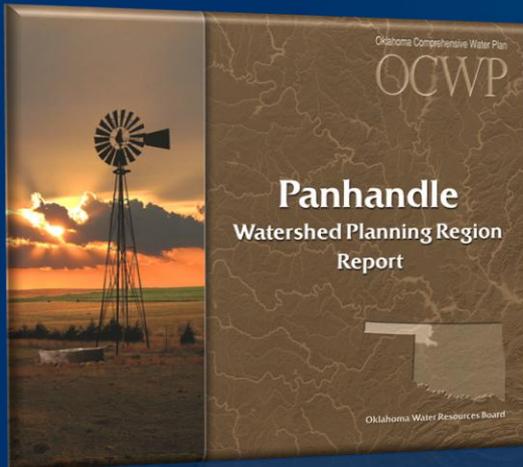
1. Characterize **demands** by water use sector.
2. Identify **reliable supplies** to meet forecasted demands.
3. Perform **technical studies** to evaluate emerging water management issues.
4. Comprehensive **stakeholder engagement** to make recommendations regarding the management of Oklahoma's water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

Most Comprehensive and Vetted Water Plan 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

Foundational Tasks in OCWP Development

- 1. Demand Projections**
- 2. Water Supply and Gaps/Depletions**
- 3. Water Supply Alternatives**
- 4. Public Participation and Policy Development**

**Tasks and sub-tasks prioritized by and contingent upon available funding.*

Foundational Tasks in OCWP Development

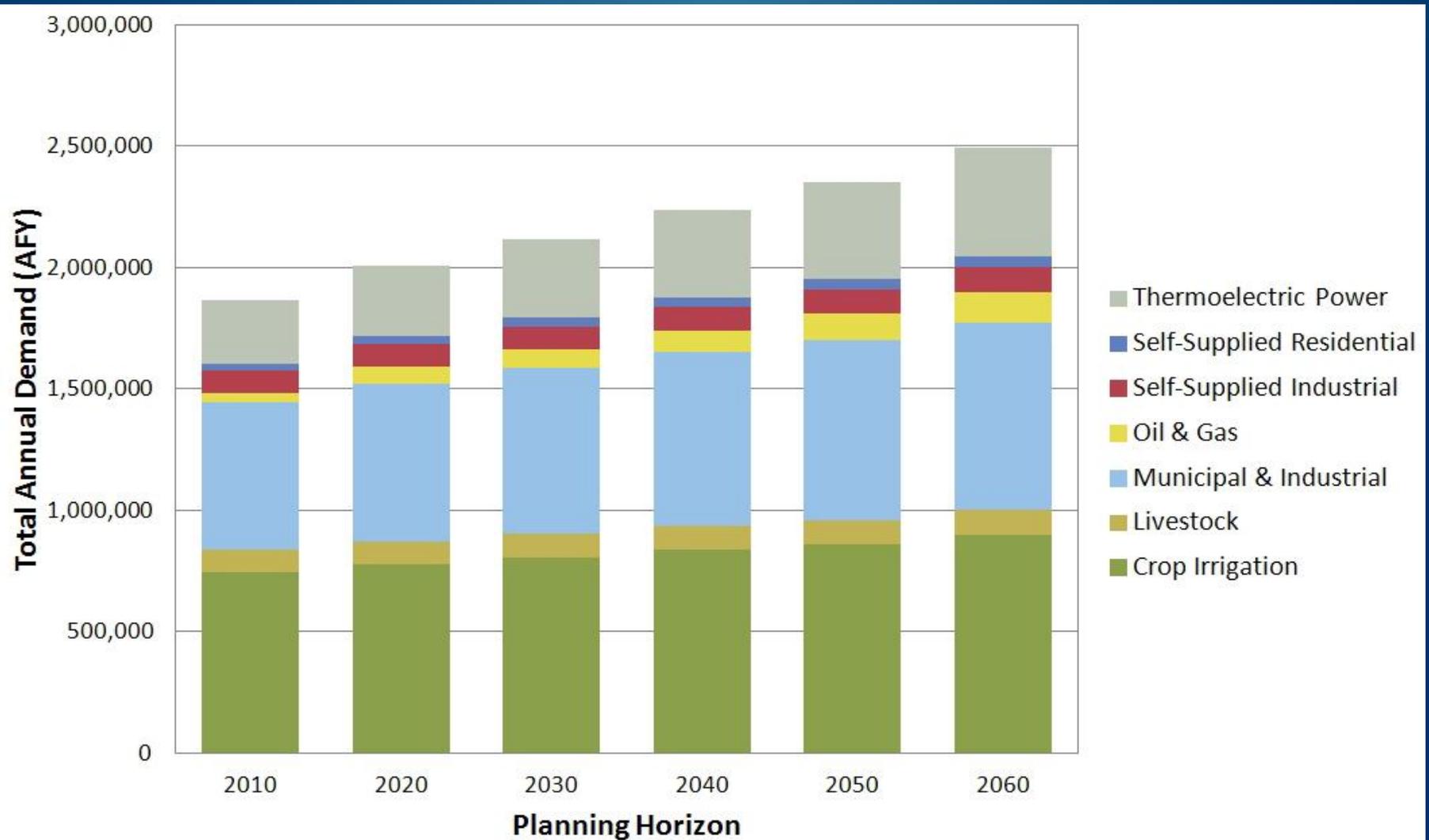
Demand Projections

- Statewide projections of demand for all major water users through 2060:
 - Municipal and industrial
 - Self-supplied industrial
 - Oil and gas production
 - Thermoelectric power
 - Agricultural
 - Domestic uses
 - Nonconsumptive uses
- Down to provider level

- Stakeholder workgroups
- Conservation Analysis
- Assessment of Climate Change Impacts

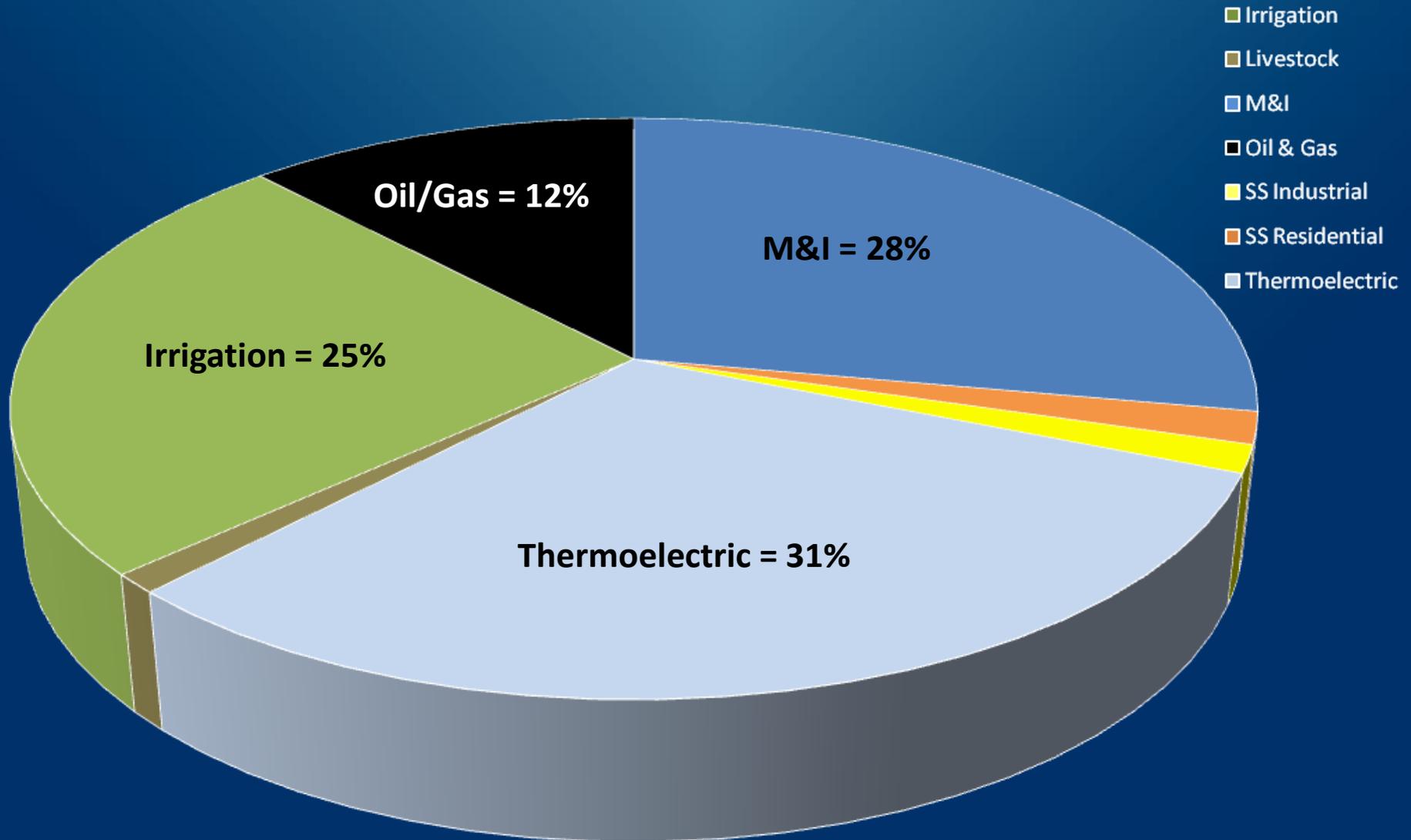
Demand Projections

Total Water Demands (2010-2060)



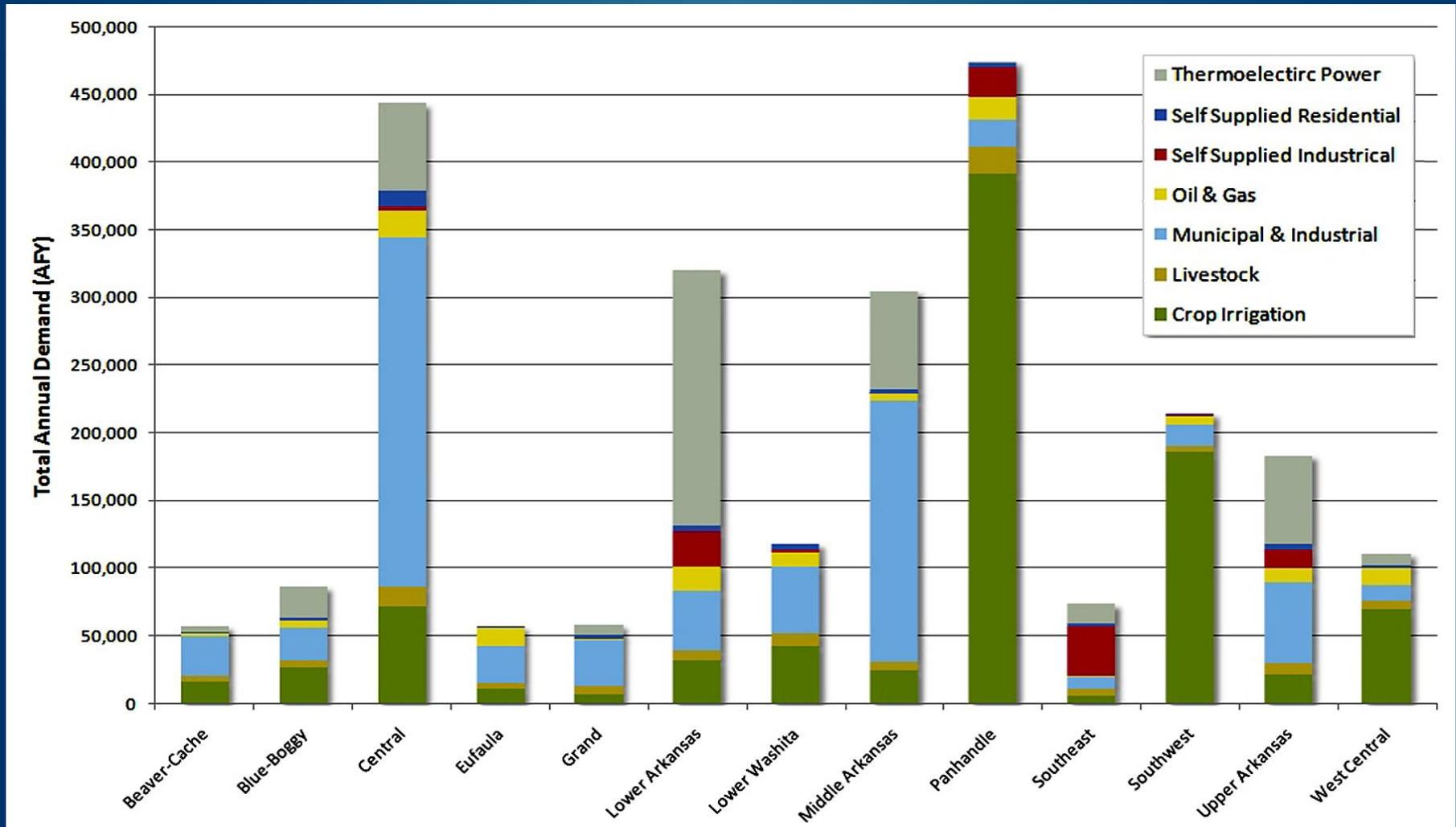
Demand Projections

Growth by Water Use Sector (2010-2060)



Demand Projections

2060 Total Water Demands By Region



Foundational Tasks in OCWP Development

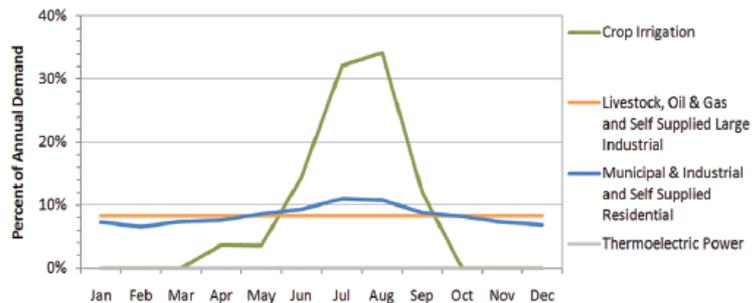
Water Supply and Gaps/Depletions

- Characterize statewide water supply availability
 - Compare supply projections with demand projections
 - Quantify anticipated deficits in supply
 - Infrastructure constraints
- Stakeholder workgroups
 - “Wet” water availability
 - Legal/Permit availability (water rights)
 - Water Allocation Modeling and OKH2O Tool
 - Statewide Surface Water Quality Trend Analysis

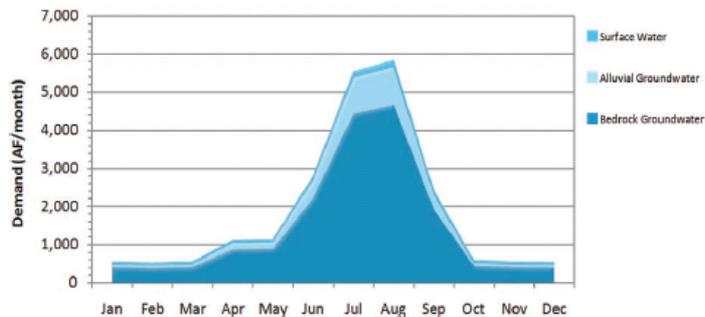
Water Supply Gaps/Depletions

Seasonal Deficits

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%

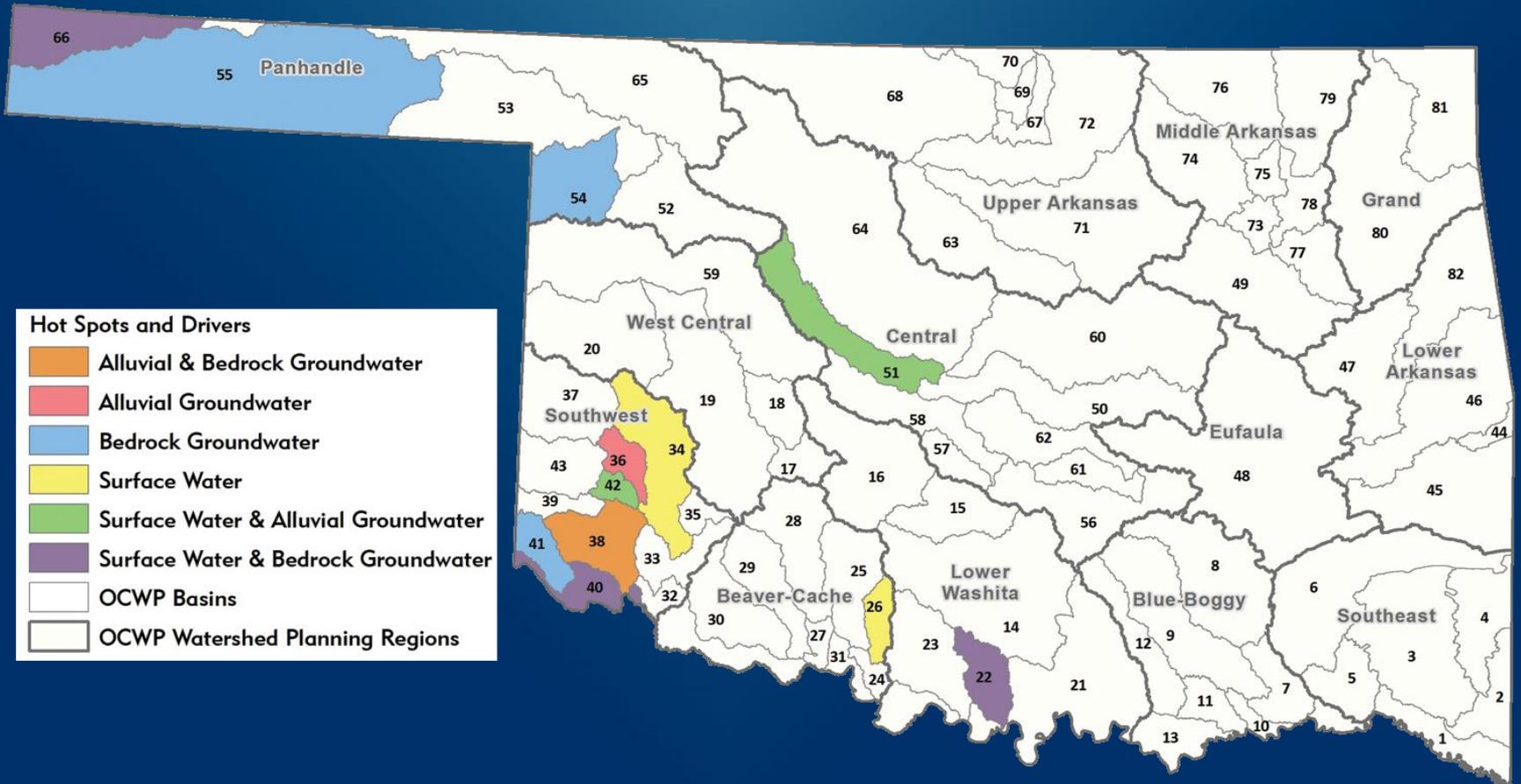
¹ Amount shown represents largest amount for any one month in season indicated.

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%	83%
2030	280	490	0	83%	83%
2040	470	710	0	83%	83%
2050	660	990	20	85%	85%
2060	920	1,340	290	87%	87%

Water Supply Gaps/Depletions

Hot Spots: Areas where most severe water problems are projected



Water Supply Gaps/Depletions Infrastructure

- Drinking Water Infrastructure Assessment (CDM/First Southwest)
- Infrastructure Community Impact Assessment
- Public Water Supply System Survey (OML/ORWA)
- Infrastructure Mapping Pilot Project



Foundational Tasks in OCWP Development

Water Supply Options/Alternatives

- Analysis of Primary Options:
 - Demand Management
 - Out-of-Basin Supplies
 - Reservoir Use
 - Increasing Reliance on SW or GW
- Conservation Analysis
- Aquifer Recharge Study and Workgroup
- Marginal Quality Water Study and Workgroup
- Reservoir Viability Study



Foundational Tasks in OCWP Development

Public/Stakeholder Participation and Policy Development:

- CDM and OWRRI facilitated and participated in hundreds of stakeholder and citizen meetings to fine-tune study results as well as develop solutions to Oklahoma's most pressing water issues.

- Local and Regional Input Meetings
- Water Law/Science Seminars
- Stakeholder Meetings
- Planning Workshops
- Legislative Workgroups
- Tribal Water Issues/Liaison
- Academy Town Hall
- Feedback/Implementation Meetings

OCWP 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:

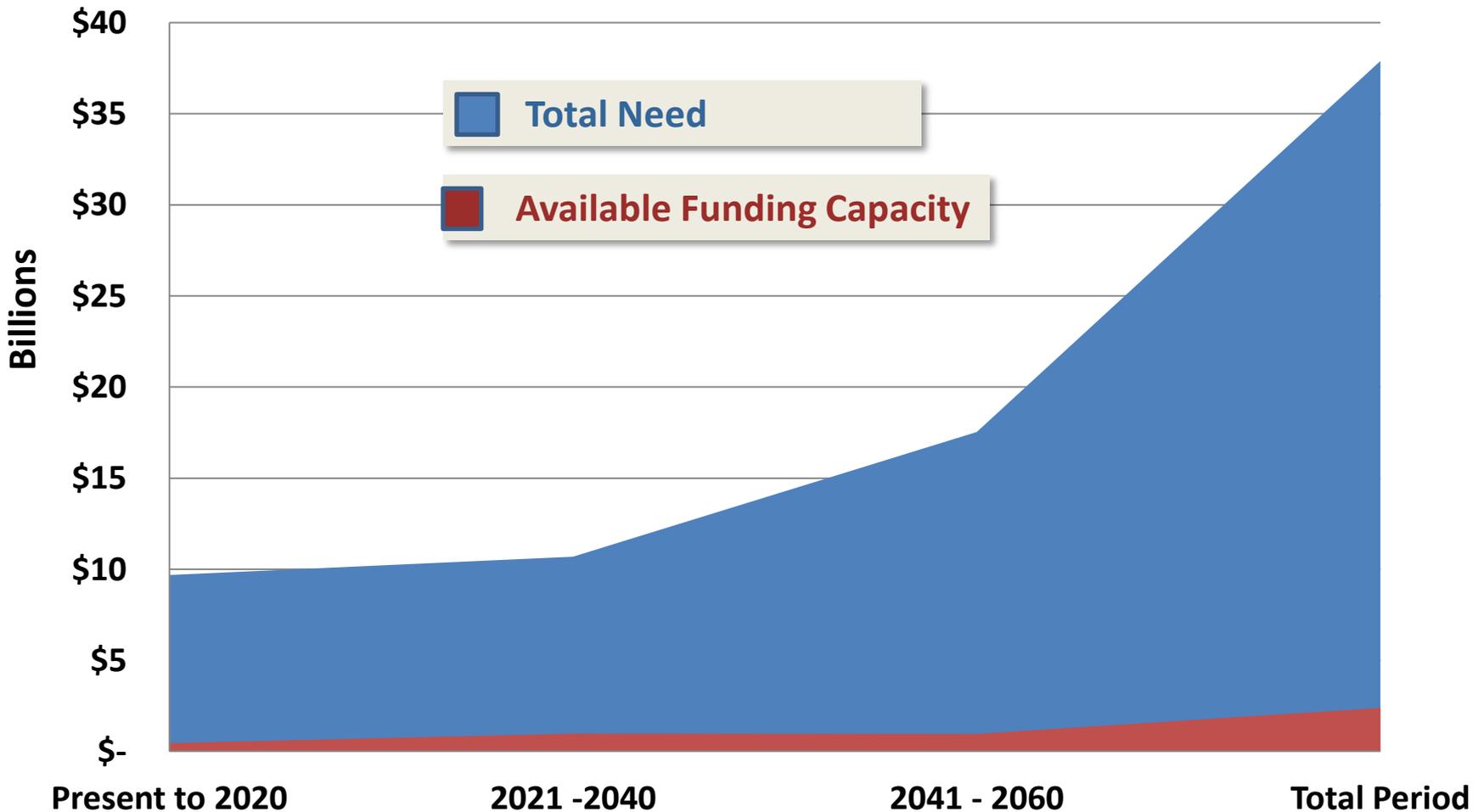
- Address Oklahoma's projected **\$82+ billion** water and wastewater infrastructure need by 2060.
- OWRB's 5 successful grant & loan programs can only satisfy 4-9% of this need
- Specifically address the needs of small- to medium-sized communities.

**Water Infrastructure
Credit Enhancement
Reserve Fund
created through SQ
764.**

**HB 2193 sets
procedures
(beginning Nov. 1)
for OWRB to
administer WICERF.**

Drinking Water Project & Infrastructure Funding

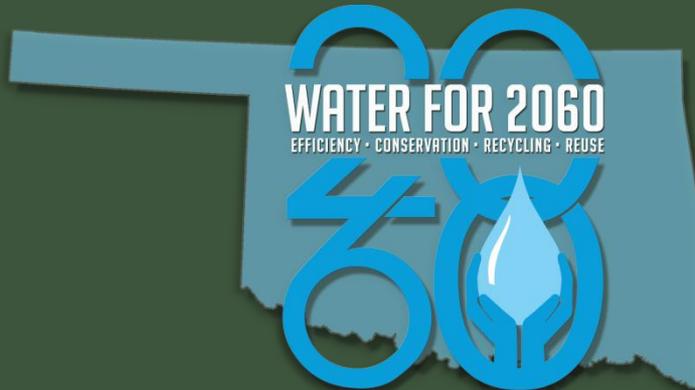
Drinking Water Project Need vs. Capacity



OCWP Priority Recommendation

Conservation, Recycling & Reuse:

- Identify innovative solutions to forecasted water shortages:
 - **Voluntary** programs/policies, financial incentives, and education.



Water for 2060 Act sets statewide goal of consuming no more fresh water in 2060 than we consume today.

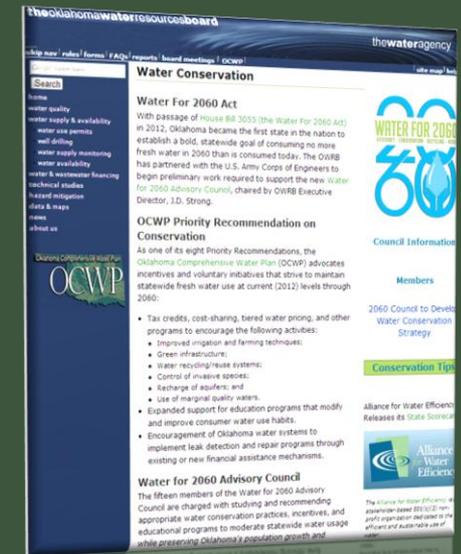
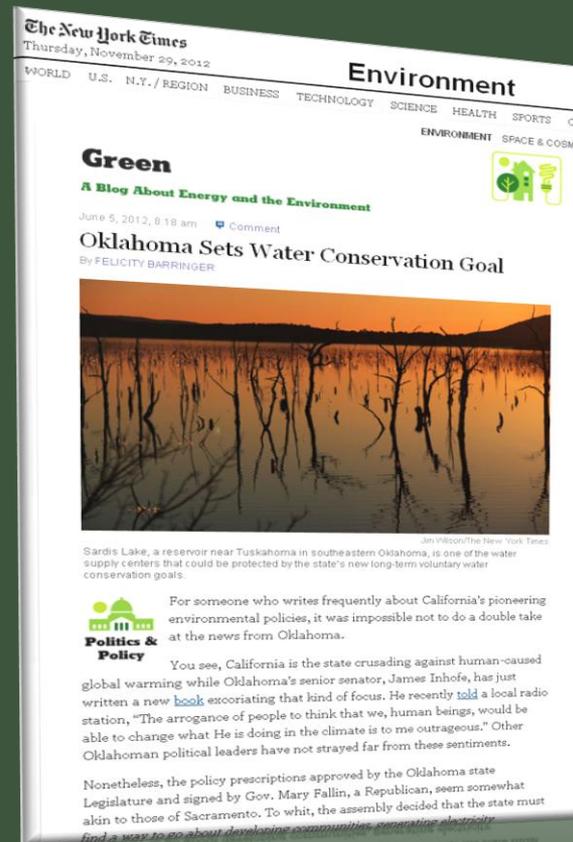
Advisory Council (supported through Corps PAS funding) will make recommendations:

- **Members named**
- **Meetings pending**

Conservation, Recycling & Reuse Water for 2060 Advisory Council

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)



Conservation, Recycling & Reuse

OCWP Conservation Analysis: 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 Priority Recommendation

Water Quality & Quantity Monitoring:

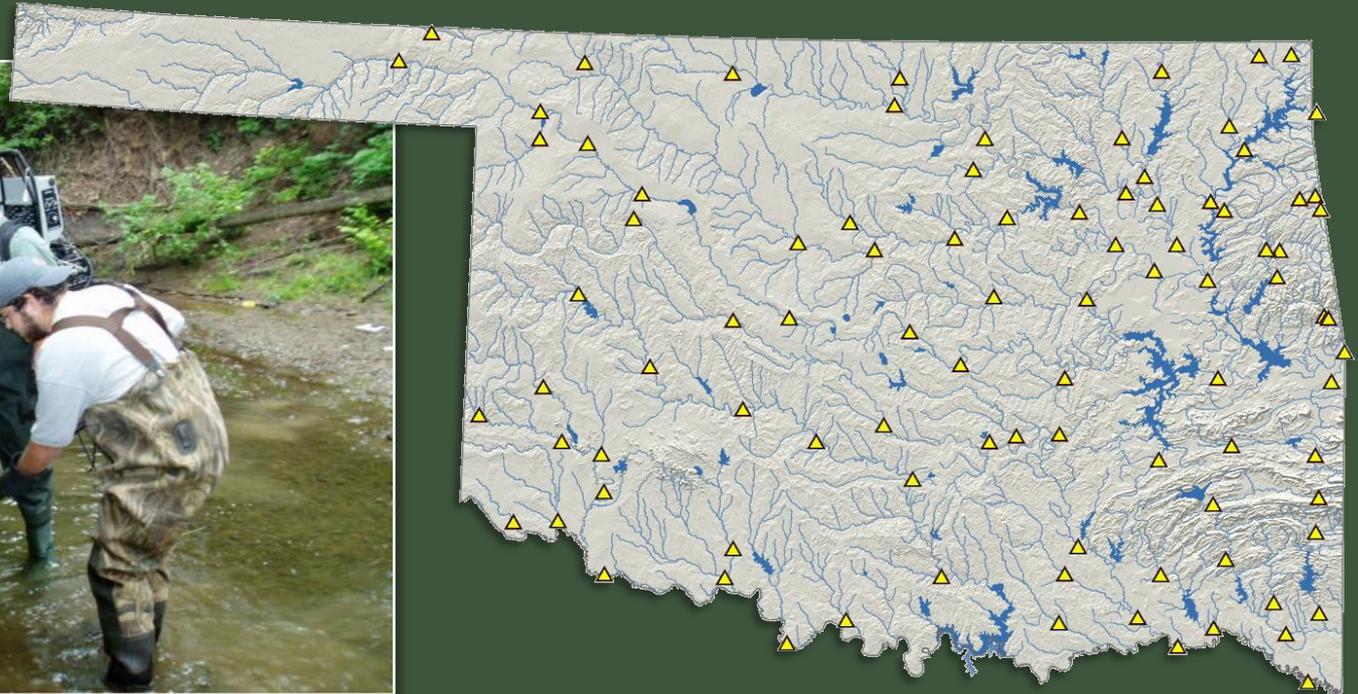
- Better data for **improved decision-making**.
- Restore funding for statewide water quality and quantity monitoring program.
- Create the first comprehensive groundwater monitoring program.

\$1.5 Million
appropriation to
create a permanent
statewide GW/SW
monitoring
network.

Water Quality/Quantity Monitoring

Stream Monitoring

- 103 sites (BUMP sites and USGS gages, including Coop Network and new OCWP gages at the terminus of all 82 planning basins)
- More frequent site visits; more parameters sampled



Water Quality/Quantity Monitoring

Lake Monitoring

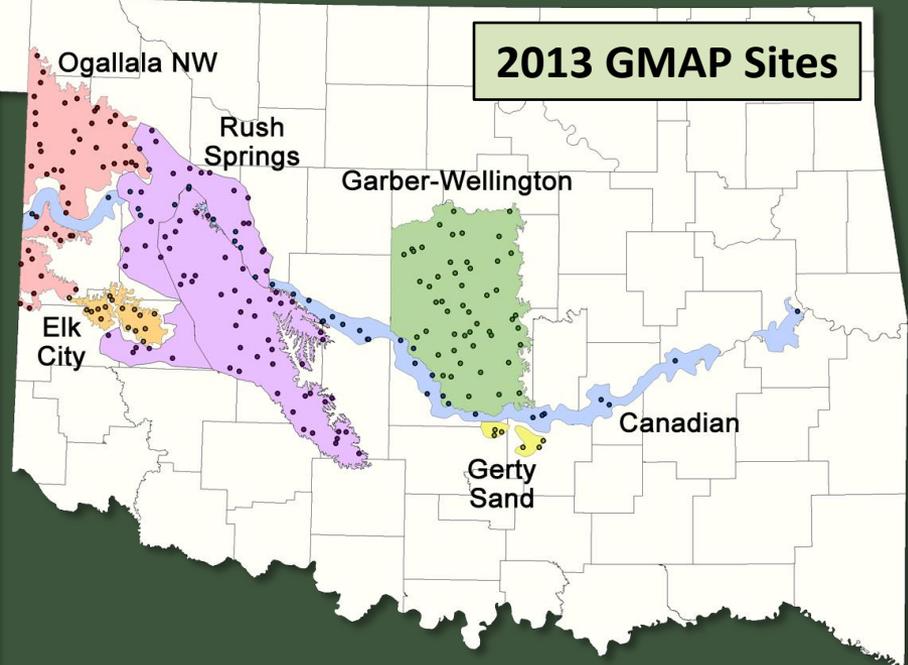
- ~130 lakes sampled statewide (BUMP sites)
- More frequent site visits
- More parameters sampled



Water Quality/Quantity Monitoring

Groundwater Monitoring & Assessment Program

- As many as 2,000 wells will eventually comprise the statewide network with coverage of every major aquifer in the state
- Both quality and quantity parameters
- First of four phases underway in 2013



OCWP Priority Recommendation

Water Supply Reliability:

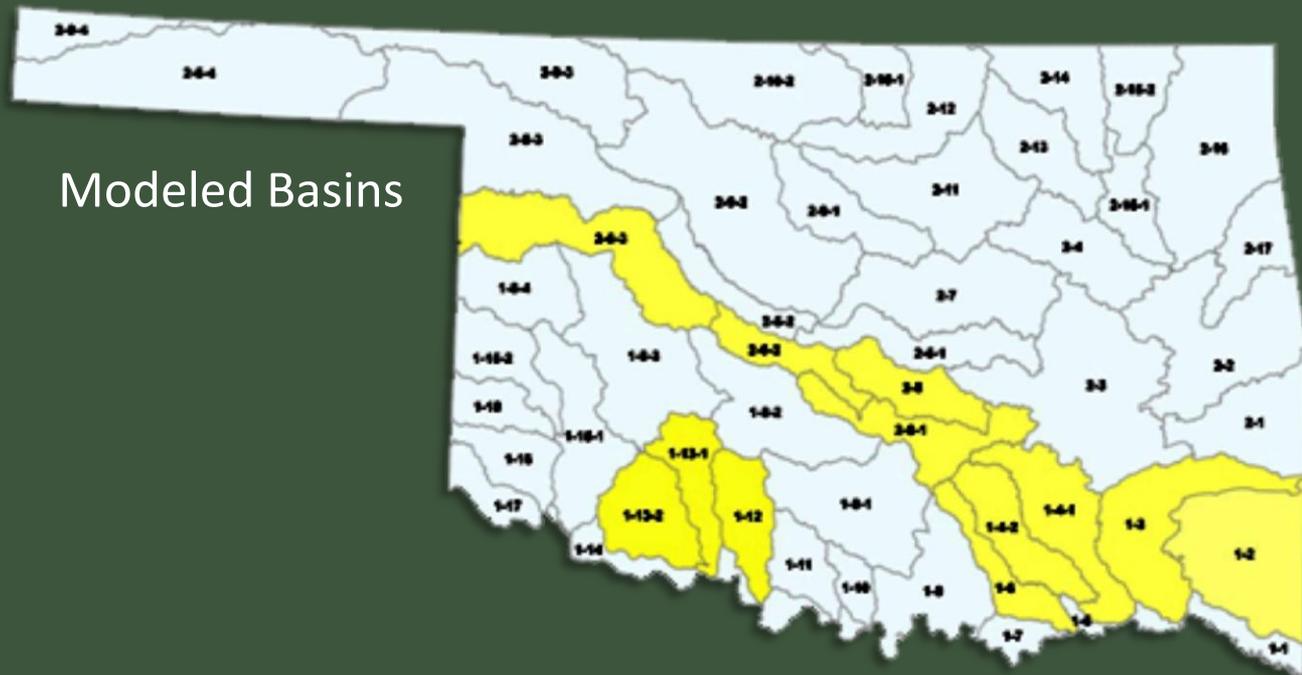
- Ensure water availability for future growth through **fair and sustainable water allocation:**
 - aquifer yield studies
 - stream water allocation models
 - Further analysis of groundwater-surface water interactions, seasonal permitting, and conservation-oriented permitting approaches

Utilization of \$1.3 million/year in Gross Production Tax proceeds for OCWP implementation (including studies) extended through 2016.

Water Supply Reliability

Stream Water Allocation Models

- 9 stream systems completed; 42 stream systems unstudied
- Prioritize systems reaching full allocation
- Prioritize OCWP “Hot Spot” Basins
- Complete allocation models by 2017



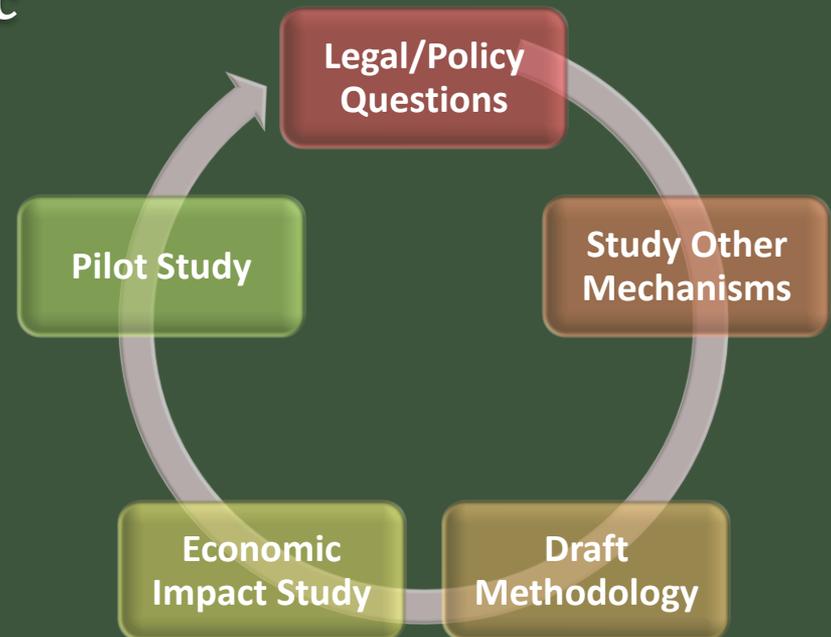
OCWP Priority Recommendation

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.

Instream Flow Advisory Group reconvened in March 2013:

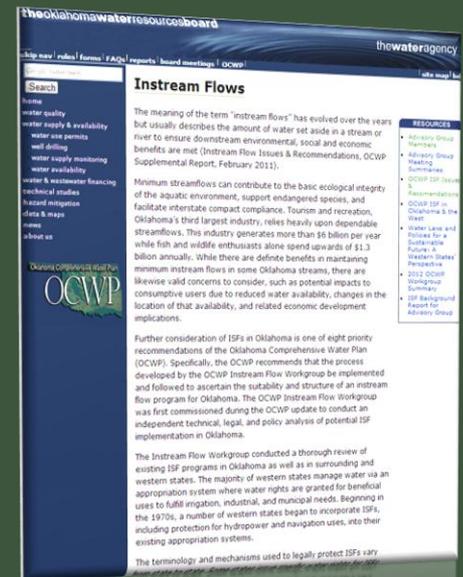
- **Two meetings to date**



Instream/Environmental Flows: ISF Advisory Workgroup

Members:

- Jim Reese (ODAFF)
- Mark Derichswieler (ODEQ)
- Barry Bolton (ODWC)
- Tom Creider (OK Dept. of Tourism)
- Arnella Karges (State Chamber)
- Brooks Tramell (OK Cons. Comm.)
- Tyler Powell (OSE)
- Marsha Slaughter (OKC)
- Kevin Stubbs (USF&WS)
- Shannon Brewer (USGS)
- Jeff Tompkins (Reclamation)
- Tom Elkins (Cherokee Nation)
- Marla Peek (Farm Bureau)
- James Gammill (ORWA)
- Diane Pedicord (OML)
- Brian Woodard (OIPA)
- Scott Dewald (Cattlemen's Assoc.)
- Jim Barnett (EFO)
- Mike Mathis (Chesapeake)
- Mike Fuhr (Nature Conservancy)
- Angie Burckhalter (Devon)
- Bud Ground (PSO)
- Charlette Hearne (ORWP)
- Sierra Club David Ocamb



www.owrb.ok.gov/ISF

OCWP Priority Recommendation

Regional Planning Groups:

- Most popular recommendation
- 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.
- No formal progress to date.

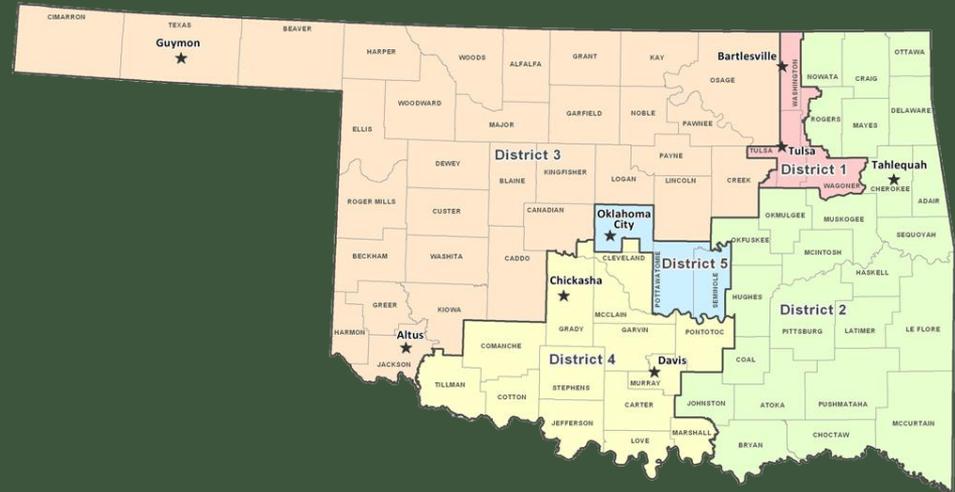


Regional Planning Groups

New Board Member Regions

Senate Bill 965:

- transitions nine-member OWRB Board from Congressional District and at-large representation to regional scheme
- loosely mirrors 1995 OCWP planning regions (plus Panhandle)
- takes initial effect in 2014



Current Board Regions



Future Board Regions

OCWP Priority Recommendation

Excess & Surplus Water:

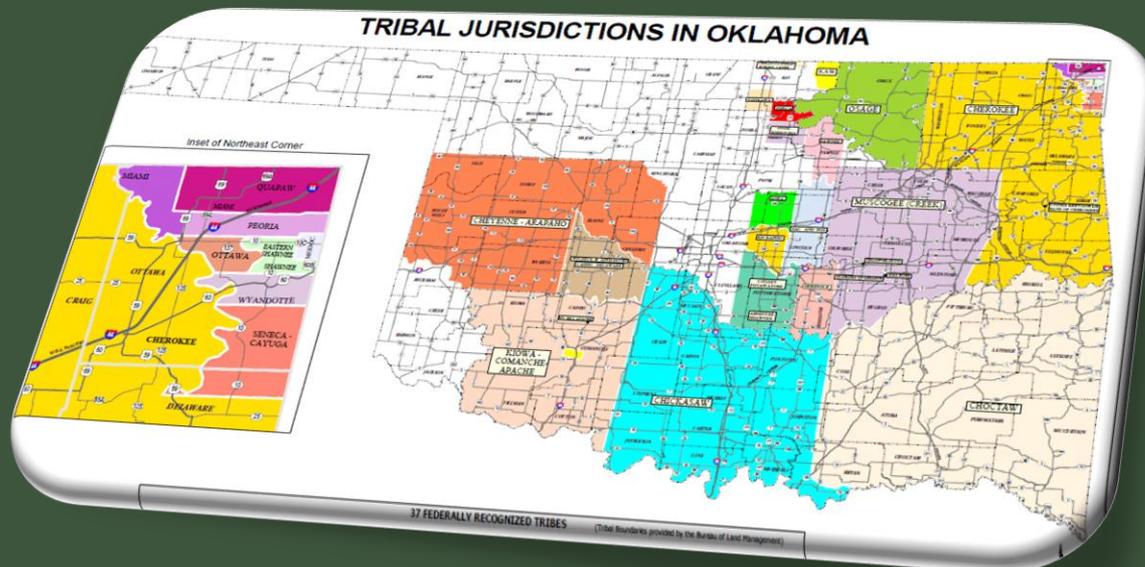
- Protect local water needs while addressing statewide demands.
- Definition and procedure required by statute.
- Ensure that the area of origin (planning basins) will never be made water deficient.



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 Supporting Recommendations & Initiatives

**Nonpoint Source
Pollution**

**Maximizing &
Developing
Reservoir Storage**

**Water
Management &
Administration**

**Dam Safety &
Floodplain
Management**

**Water Quality
Management**

Navigation

**Interstate Water
Issues**

**Source Water
Protection**

**Water Emergency
& Drought
Planning**

**Water Supply
Augmentation**

**Water-Related
Research**

**Agricultural Water
Research**

**Climate &
Weather Impacts
on Water
Management**

OCWP Supporting Recommendations

Nonpoint Source Pollution

- Promote BMPs and related conservation practices through cost-sharing/incentives

Maximizing & Developing Reservoir Storage

- Maximize existing reservoir benefits and investigate additional construction opportunities

Water Management & Administration

- Provide flexibility and strengthen water use permitting process
- Improve protection of GW supplies

OCWP Supporting Recommendations

Dam Safety & Floodplain Management

- Support and expand local floodplain management efforts through cooperative partnerships, mapping, education and funding.
- Establish a source of funding for high-hazard dam reclassification, dam breach inundation mapping, emergency planning and outreach.
- Address liability issues of dam owners.

Water Quality Management

- Increased collaboration and stable funding for point and nonpoint source pollution control programs.

OCWP Supporting Recommendations

- **Navigation**
 - OWRB and ODOT Waterways Advisory Board should work cooperatively and proactively to address navigation-related issues.
- **Interstate Water Issues**
 - Explore the creation of standing compact committees to limit potential interstate conflicts and litigation.
- **Source Water Protection**
 - State technical assistance to public water supply systems to develop source water and wellhead protection plans.

OCWP Supporting Recommendations

Water Emergency/Drought Planning

- Update the Oklahoma Drought Management Plan to specifically address all water emergencies and expand related training opportunities for system operators.
- **Bureau of Reclamation drought planning tool**
- **Emergency Drought Relief Fund (HB 1923)**
- **OCWP Public Water Supply Planning Guide**

Water Supply Augmentation

- Evaluate the effectiveness of invasive plant species management, increased water filtration and runoff reduction in augmenting water supplies.

OCWP Supporting Recommendations

Water-Related Research

- State support for continued development and advancement of research programs to assist water users/managers in addressing Oklahoma's most pressing water issues.

Agricultural Water Research

- Local, state, federal and tribal agencies should collaborate with agricultural officials to support associated water research, education and extension activities.

Climate & Weather Impacts on Water Management

- State should advance understanding of climate and weather and associated impacts on Oklahoma's citizens and water user community.

2012 OCWP Update

Funding

OCWP Funding (FY 2007→):

- State Appropriations
- Leverage state appropriations with federal funds through federal authorities:
 - Federal:
 - Corps of Engineers
 - Bureau of Reclamation
 - USGS
 - State:
 - OK Water Resources Research Institute
 - State Gross Production Tax

2012 OCWP Update Funding

Planning
Partners



2012 OCWP Update

Funding

State Audit:

- OWRB requested an official audit of the OCWP by the State Auditor/Inspector
- Demonstrated fiscal responsibility:
 - OCWP expenditures were substantially less than that previously attributed to process

2012 OCWP Update

Funding

OCWP Expenditures		
Expenditure Category	Expenditure Detail	Expenditure Amount
State	Contractual	\$6,754,988
	Salary & Fringe	\$2,146,960
	Travel	\$49,939
	Supplies	\$48,541
	Equipment	\$67,968
	Other	\$234,094
	Adjustment I	\$421,015
	Adjustment II	-\$118,040
	<i>Subtotal, State</i>	\$9,605,465
Federal		\$3,768,399
Other		\$2,932
Total Expenditures		\$13,376,796

Contract Expenditure Detail

	Contractor Category	Direct Payments from OWRB to Vendor	Total Amount Matched by Contractor	Amounts Contractors Incurred Above Contract Amount	Total Cost of Work
State	OK Dept of Environmental Quality	\$126,874	-	-	\$126,874
	OK Dept of Agriculture	-	\$50,000	-	\$50,000
	University of Oklahoma	\$329,704	\$24,217	-	\$353,921
	OK State University	\$1,527,041	\$1,620,858	-	\$3,147,899
		\$1,983,619	\$1,695,075		\$3,678,695
Federal	Bureau of Reclamation	\$10,000	\$335,000	-	\$345,000
	Corps of Engineers	\$1,015,000	\$2,874,992	-	\$3,889,992
	U.S Geological Survey	\$669,750	\$539,750	\$18,657	\$1,228,157
		\$1,694,750	\$3,749,742		\$5,463,149
Other	CDM Smith	\$469,147	-	-	\$469,147
	Guernsey	\$379,656	-	-	\$379,656
	Intera	\$100,000	-	\$2,932	\$102,932
	Dr. Lindsay Robertson	\$27,345	-	-	\$27,345
	OK Municipal League	\$57,500	-	-	\$57,500
	OK Rural Water Assoc	\$47,000	-	-	\$47,000
	Terri Sparks (contractor)	\$285,962	-	-	\$285,962
		\$1,366,610	\$ -		\$1,369,542
	TOTALS	\$5,044,979	\$5,444,817	\$21,589	\$10,511,386

2012 OCWP Update

Funding: Going Forward

- Increased appropriations in FY-13 to implement OCWP priorities have been left intact for FY-14

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.**



State of Oklahoma

OWRB

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