

40th Annual Oklahoma Governor's Water Conference and Research Symposium
'Water Means Business' December 4-5, 2019

Oklahoma's Comprehensive Water Plan... Partnerships for Water Resiliency

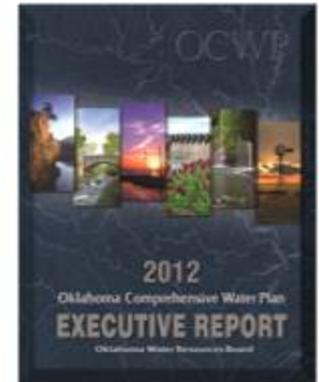
Julie Cunningham
Executive Director



Oklahoma's Comprehensive Water Plan

50-year Needs – Options – Solutions

- Quantified Water Supply Infrastructure Needs
- Quantified long-term demand vs. supply and potential shortages by region for each use sector (82 subbasin level)
- Numerous technical studies and topic-specific workgroups
- Multi-year stakeholder engagement identified policy recommendations and additional study needs



OCWP Priority Recommendations

Infrastructure Financing

Conservation, Efficiency, Reuse

Water Monitoring

Supply Reliability

Fish & Recreation Flows

Excess/Surplus

State/Tribal Resolution

Regional Planning

OCWP Priority Recommendation

Infrastructure Financing

- Address projected \$82+ billion 2060 water/wastewater infrastructure need
- In 2012, SQ 764 Water Infrastructure Credit Enhancement Reserve Fund- addl. leveraging capacity to fund more investment
- AAA rating and federal ROI 30% above national avg. at over 3:1
- Since 2012 closed \$1.7 billion in loans/grants
- Sampling of others:
 - USDA Rural Development \$235 million
 - Communities Unlimited- Community Loan Fund \$8.5 million



Oklahoma Funding Agency Coordinating Team



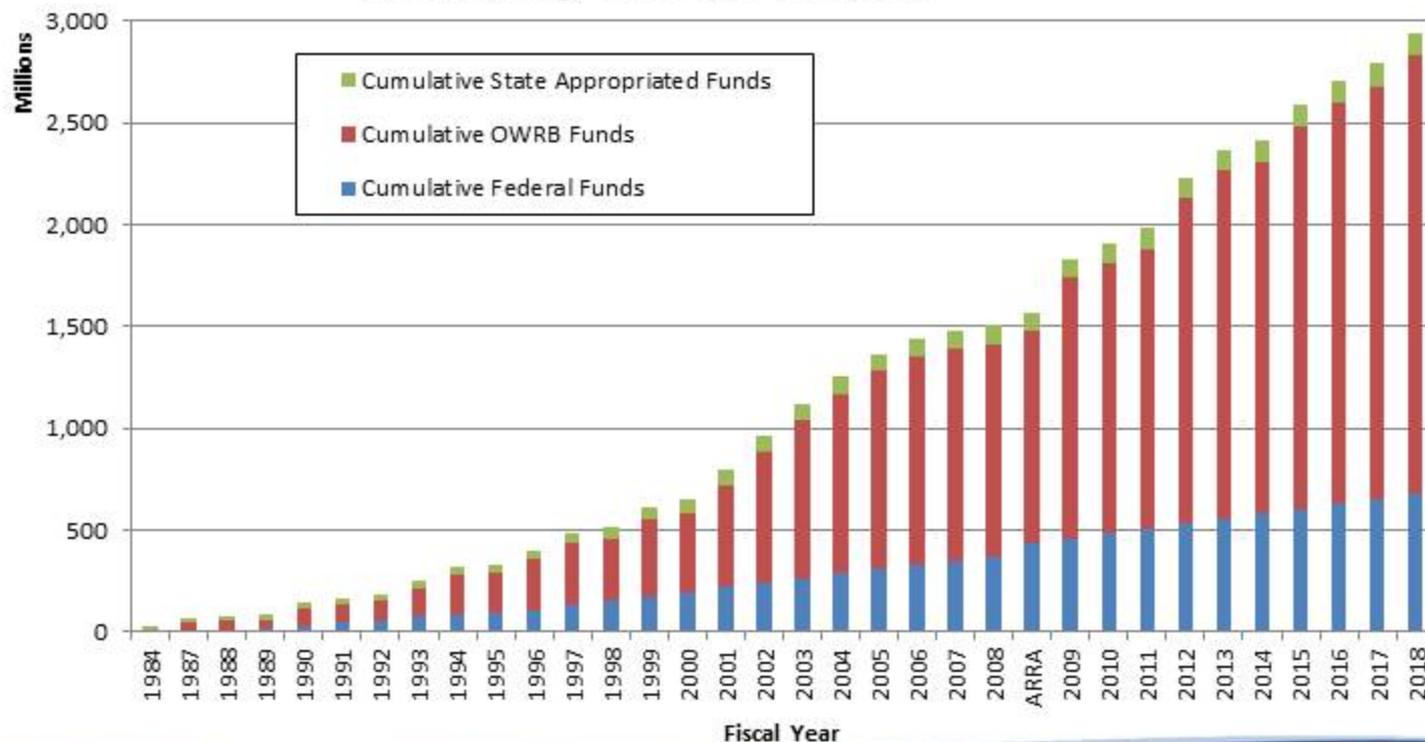
State, federal agencies, non-profits, tribes working to address water infrastructure challenges across Oklahoma

- Ok. Water Resources Board
- Ok. Dept. of Commerce
- Ok. Dept. of Env't Quality
- Ok. Rural Water Assn
- Ok. Council of Governments
- Community Unlimited
- Indian Health Service
- US EPA
- USDA Rural Development
- US Bureau of Reclamation



Infrastructure Resiliency Requires Investment at All Levels

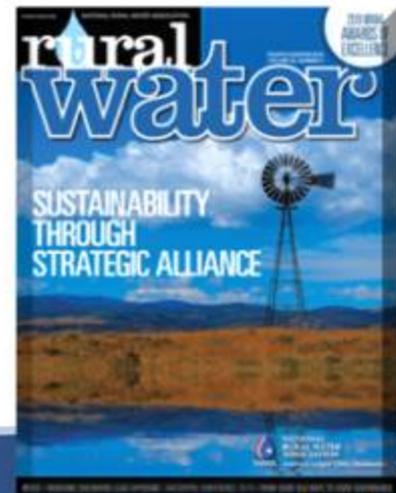
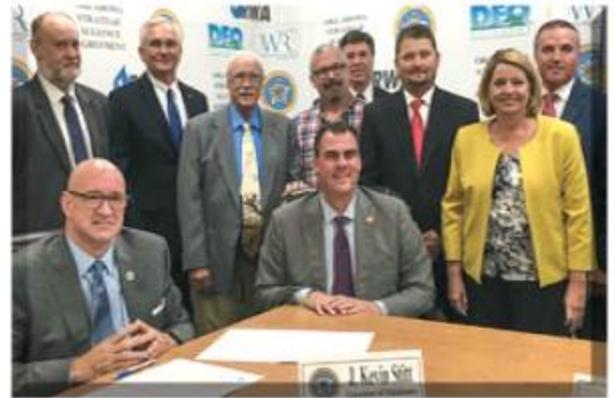
OWRB Funding- Cumulative Investments by State/ Federal/OWRB Bonds



Rural Water Sustainability Alliance

Secretary of Energy and Environment-
ORWA-ODEQ-OWRB small communities
comprehensive system inventory and
long-range planning initiative:

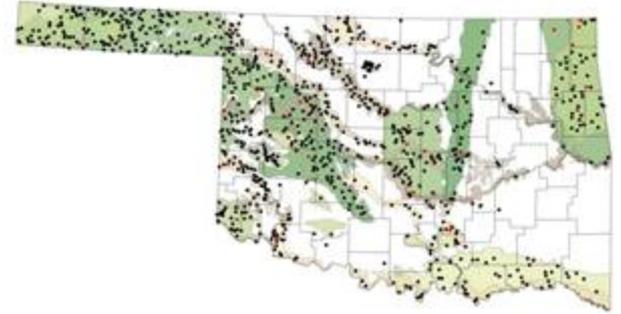
- Toolbox for financial capital improvements and reinvestment in infrastructure
- Water leak audits and training lead to cost savings for systems
- System mapping and long-range technical, financial, managerial planning



OCWP Priority Recommendation

Water Quality-Quantity Monitoring Network

- Collect 'foundational' physical, chemical, and biological water data for improved decision-making
- 2012 Legislature restored funding for statewide Beneficial Use Monitoring Program (BUMP)
- Created first-ever comprehensive groundwater monitoring program (GMAP)
- 1,300 stream, lake, and groundwater well sites

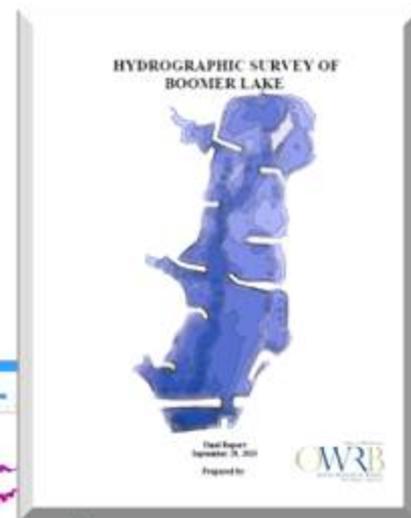
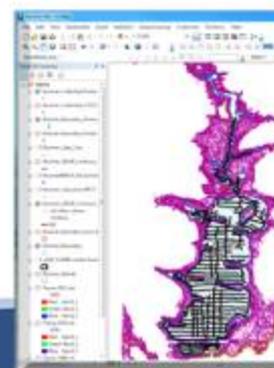
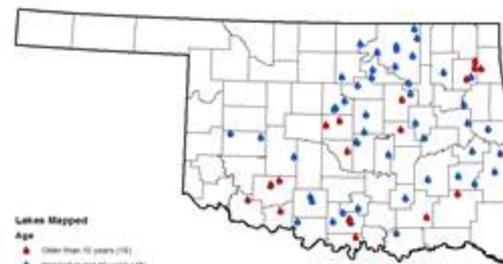


Cooperative Water Projects

- Oklahoma Water Quality Standards
- City of Norman and Edmond Lake Studies
- Grand River Dam Authority Lake Management Study- effects on downstream aquatic communities
- Bathymetric mapping surveys- municipalities and Master Conservancy Districts
- Cooperative efforts with southeastern Oklahoma Tribes – Coordinating monitoring and technical studies and training efforts to ensure data compatibility
- USGS Flow Monitoring and Technical Survey
- National Water Quality Assessment
- Development of Lake Internal Loading Methodology
- Wetland Risk-Stressor Assessment Projects



Water System and Lake Capacity Contour Mapping



OCWP Priority Recommendation

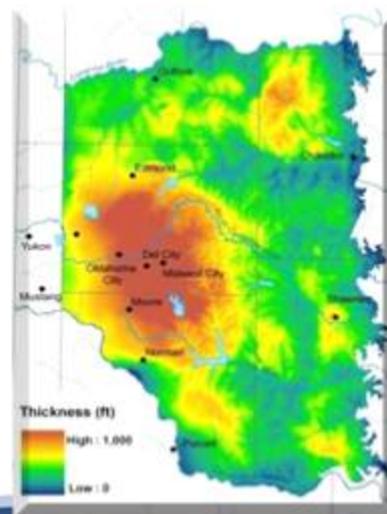
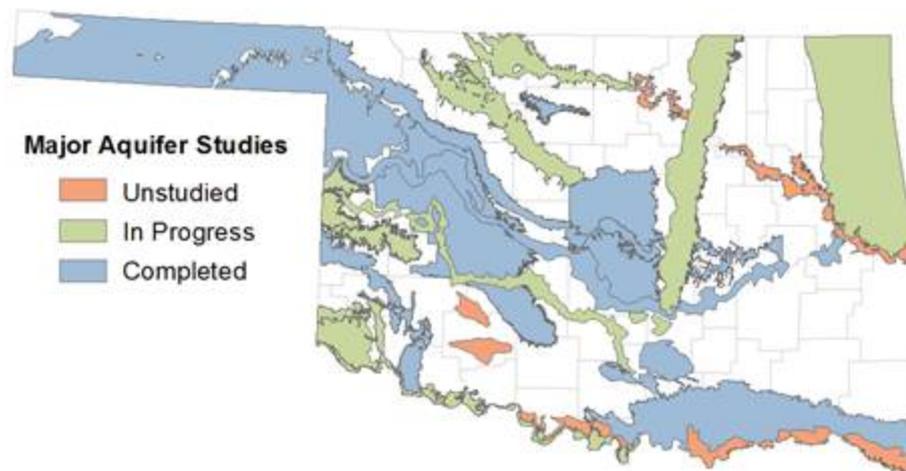
Water Supply Reliability— Availability

- Recommendation called for ensuring water availability for future growth through **fair and sustainable water allocation**
 1. Water availability and allocation studies
 2. Analysis of new water management approaches
- Water law directs OWRB to allocate water rights based on results of yield studies
- Funded through Gross Production Tax since 2012



Groundwater Availability Studies

Study	Status
Garber-Wellington	Completed
North Canadian River Alluvium	Completed
Canadian River Alluvium	Completed
Enid Isolated Terrace	Completed
North Fork of the Red River	Completed
Rush Springs	Completed
Elk City Sandstone	On going
Gerty Sand	On going
Cimarron River A&T	On going
Salt Fork of the Red River	On going
Ogallala Roger Mills	On going
Washita Reach 1	On going
Washita Reach 3&4	On going
Boone-Roubidoux	On going
Blaine	On going
Vamoosa-Ada	On going
Salt Fork of the Arkansas	On going
Arkansas River A&T	Pending
Red River A&T	Pending
Arbuckle-Timbered Hills	Pending



Aquifer Thickness

OCWP Priority Recommendation

Fish & Recreation Flows

- Recognized environmental flows help support recreation/local economies
- Called on diverse Advisory Group to assess suitability and structure of an in-stream flow program
- Ultimate goal—better understand benefits/implications of an ISF program, consistent with goal of managing water resources for multiple uses
- No agreement by Advisory Group , but general discussion themes:
 - One-size approach wouldn't work
 - Protect existing water rights
 - Quantify water needed to support particular instream values AND economic impact of any approach
 - Common sense, timely, cost-effective
 - Voluntary mechanisms worth a look (water lease/ banking/storage /conservation grants/outreach)



OCWP Priority Recommendation

Tribal-State Resolution

Goal of improving collaboration and reduce uncertainty in solving our collective water supply challenges

- USGS stream gauge network, technical studies and training efforts to ensure data compatibility
- Water planning, watershed restoration, regional drought contingency planning, water banking, etc.
- Coordinated infrastructure financing
- Interstate issues- e.g. Oklahoma-Arkansas agreement on Illinois River phosphorus control
- Information sharing workshops and conservation outreach

OCWP Priority Recommendation

Regional Water Planning

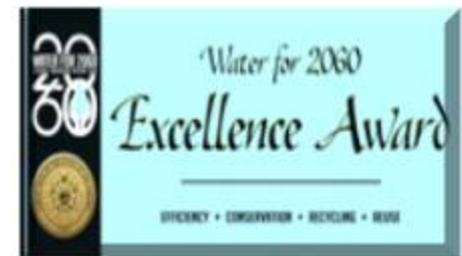
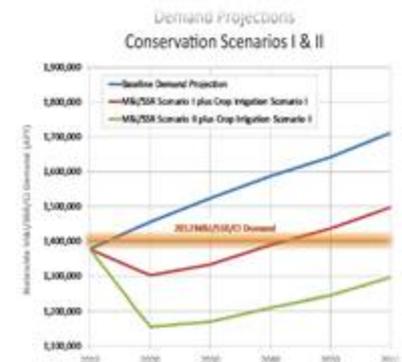


- Called for establishing 13 non-regulatory, regional planning districts charged with developing plans consistent with OCWP
- Proposed 2012 legislation did not pass— concerns re: prescribed boundary lines and potential for dispersed water authority conflicting with role of state
- Today, several regional water and drought planning efforts
- 2018 HB 2263 - Creates Groundwater Irrigation District Act – (Murdock/Patzkowsky)
- Remains a priority for future water resiliency— OCWP 2025

OCWP Priority Recommendation

Conservation/Reuse/Efficiency

- OCWP showed drastic water savings through various levels of conservation
- Recommended voluntary policies, incentives, and public education
- Spurred 2012 Water for 2060 Act-aggressive water-neutral use goal through conservation, efficiency, and developing new sources
- Challenged Oklahoma to become the nation's most water-efficient state



OCWP Priority Recommendation

Conservation/Reuse/Efficiency

Collaboration with Legislature, communities, consultants, O&G industry, ORWA, OML, ODEQ, OCC(s), ODAFF, academia

- **Marginal Water Sources Development**
 - Water Reuse
 - Oil and Gas Produced Water Working Group (2016)
 - Brackish Water Development (2018 HB 3405)
- **Maximizing Water Storage**
 - Aquifer Storage/Recovery (2016 SB 1219)
 - Recharge through Soil Health
 - Reservoir Storage Capacity Studies



Conservation/Reuse/Efficiency

Efficient Irrigation – Master Irrigators Program

- Committing funds to assist OSU develop outreach materials, moisture probes, and certification for Master irrigators

Soil Health promotion and research

Source Water Protection Workgroup & Collaboration

- Additional funding from NRCS is now available to landowners/farmers for BMPs on SWP. Mapping of current SWP areas and finding great new candidate areas.
- Partners: OCC, ORWA, NRCS, ODAFF, DEQ, GWPC,

OCWP Legislation Since 2012

2012

- Gross Production Tax Revenue Extended through 2016 - Legislature
- \$1.5 million in appropriations for SW/GW monitoring network - Legislature
- HB 3055 Water for 2060 Act – Sen. Fields & Reps. Steele, Lockhart, and Roan
- HJR 1085 - State Question 764 – Water Infrastructure Credit Enhancement Reserve Fund – Sen. Crain and Fields & Rep. Richardson, Hickman and Roan
- SB 1043 ODEQ Reuse Legislation – Sen. Fields Marlatt and Fields & Rep. Martin

2016

- SB 1219 – Aquifer Storage & Recovery framework– Sen. Fields & Rep. Pfeiffer and Osborn

2017

- HB 1485 authorizes pilot programs for aquifer storage and recovery; adds definitions of aquifer storage – Sen. Griffin & Rep. Watson

OCWP Legislation Since 2012

2018

- SB 1294 – Authorized gradual implementation of MAY and statewide well spacing – Sen. Pederson, Murdock, Rosino and Griffin & Rep. Pfeiffer and Osborn
- HB 3405 – Authorized use of marginal quality water resources by allowing for safe completion of marginal quality water wells – Sen. Fields & Rep. Watson

2019

- SB 539 – Extension of Gross Production Tax – Sen. Jech & Rep. Newton
- HB 2263 - Creates Groundwater Irrigation District Act – Sen. Murdock & Rep. Patzkowsky
- SB 998 - Defines taking and use of marginal water to be beneficial and not waste – Murdock/Patzkowsky

OCWP 2025 Approaches and Investigations

- **Drill-down on Planning:** Elevate flood resiliency planning, real costs of drought and flooding regional and small system solutions, regional economic development,
- **Update Water Supply and Demand projections and maps**
Tapping into experts from all water use sectors
- **Develop Policy Recommendations, Studies** facilitating partner and stakeholder dialogue
- **Pursue Water for 2060 Act Advisory Group Recommendations**
Agriculture/Energy/M&I water sector efficiency & outreach
- **Develop Mobile Planning & Conservation Tools**

OCWP 2025 Approaches and Investigations

Some Potential Studies:

- **Infrastructure Needs Survey/Study Policy: Time for BOLD Solutions:** expanded to include flood control; ID potential solutions to big problems in small communities;
- **Quantify Water Storage:** statewide reservoir capacity and condition of aging infrastructure
- **Instream flow:** voluntary and incentives policies, regional economic impact analyses, timely information, infrastructure solutions
- **Marginal water sources Inventory**
- **Soil Health Economic Benefit**

Thank You

Julie Cunningham

Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118
405.530.8800 • www.owrb.ok.gov

