



Forecast-informed reservoir operations (FIRO) and water resources management in Oklahoma

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Oklahoma Water Resources Board
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405.530.8800 • www.owrb.ok.gov



OWRB History

- 1957: Board was created during worst drought in history and water pollution crisis due to population expansion
- 1955: joint house resolution established legislator and citizen committee to identify local water concerns
- Recommendations called for a new authority to administer water rights, negotiate federal policies, and develop State's water resources
- Over 61 years, the OWRB has focused on fair water appropriation, water infrastructure financing, long-range water planning, and robust technical data collection to inform state and local policy and planning.

Oklahoma Water Resources Board

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

9 Governor-appointed
Board of Directors

Executive
Director

Administrative
Services

Financial
Assistance

Water Quality &
Monitoring

Planning &
Management

Financial Assistance Division

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

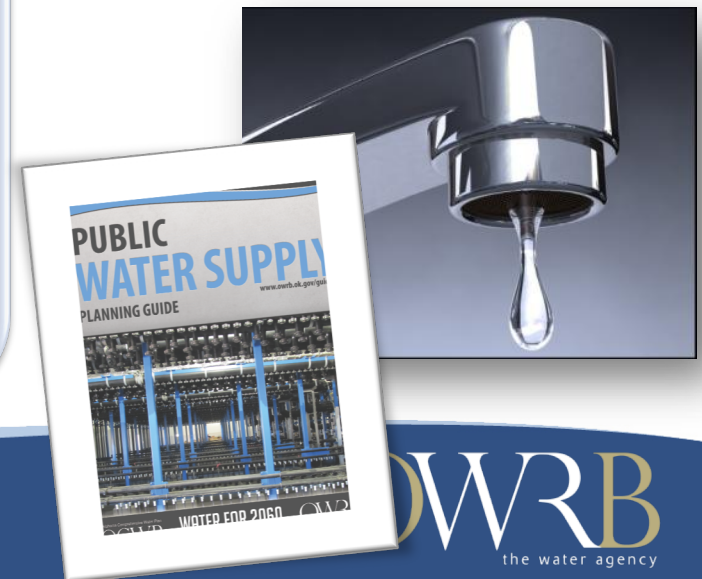
- \$4.3+ billion over 2,246 loans and grants.

OWRB
Loan and
Grant
Programs

- Clean Water State Revolving Fund Loans
- DW State Revolving Fund Loans (w/ ODEQ)
- State Revenue Bond Loan Program Loans
- Grants

Funding Sources—

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



Water Quality Division

Conducts long-term water quality and quantity monitoring of the state's surface and groundwater resources and promulgates Water Quality Standards.

- Beneficial Use Monitoring Program, created in 1998, is the state's comprehensive water quality monitoring effort.

Funding Sources—

- State Appropriations
- Federal Appropriations
- Contracts with local government and state agencies

OWRB Water Quality Programs

- Water Quality Standards
- Lake Monitoring Program
- Groundwater Monitoring Program
- Streams Monitoring Program
- Special Studies



Planning & Management Division

Responsibility is on water quantity— water planning, equitable/reasonable use, storage, hazard mitigation

- Approx. 13,149 groundwater and surface water permits in OK.
- Over 4,700 dams

Funding Sources—

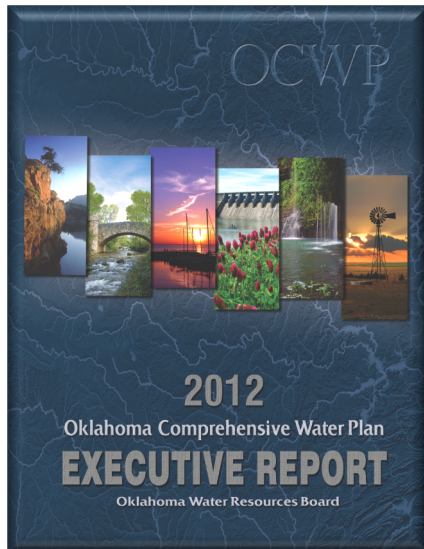
- Federal dollars
- State Appropriations
- Gross Production Tax
- Fee revenue

OWRB P&M Programs

- Water Rights Permitting and Administration
- Oklahoma Comprehensive Water Plan
- Water Planning Assistance
- Dam Safety
- Floodplain Management
- Water Well Drillers/Pump Installers
- Hydrologic Studies

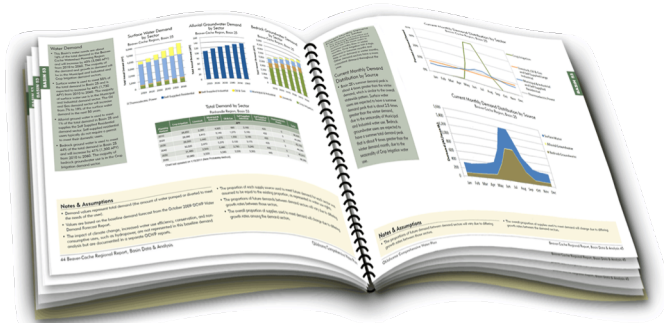


Oklahoma Comprehensive Water Plan



- 50-year plan characterizing water supplies, demands, options and public policy to meet the needs of all Oklahomans
- 5-year public input and technical studies process with numerous stakeholders and partners

- Overarching State Water Policy Recommendations
- Wealth of technical data, information and many technical studies through numerous workgroups
- 13 Watershed Planning Region Reports



OCWP Priority Recommendations

Infrastructure Financing

Conservation, Efficiency, Reuse

Water Monitoring

Supply Reliability

Fish & Recreation Flows

Excess/Surplus

State/Tribal Resolution

Regional Planning

Oklahoma Water Law Permitting

- Groundwater:
 - fresh water under the surface of the earth regardless of the geologic structure in which it is standing or moving outside the cut banks of any definite stream
- Stream or Surface Water:
 - water in a “definite stream” (a watercourse in a definite, natural channel, with defined beds and banks, originating from a definite source or sources of supply)
- No priority of uses for Groundwater
- Seniority System for Stream Water

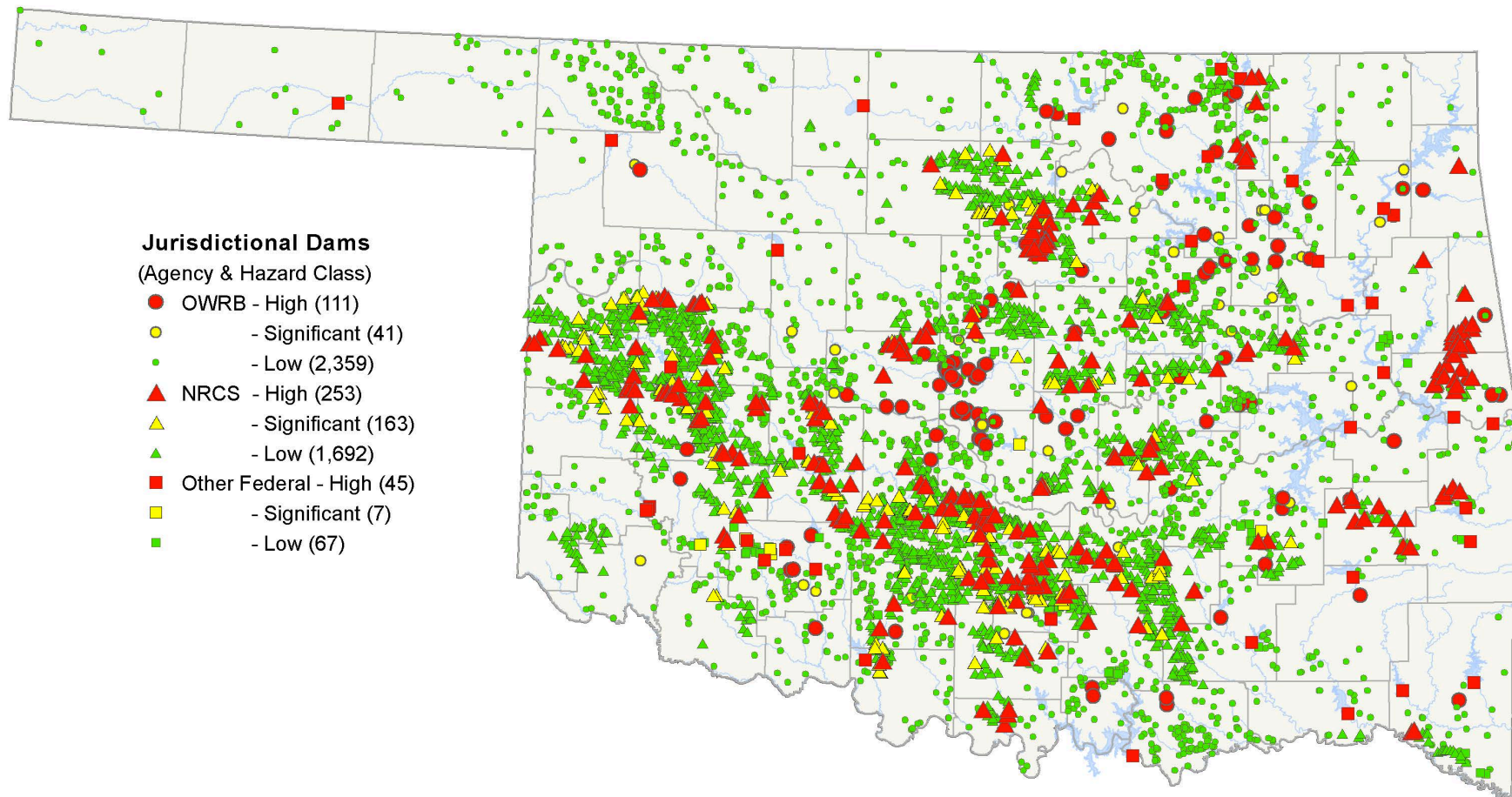
Water Storage & Permitting

- Reservoir Storage is absolutely critical to OK's surface water appropriation system.
- Life span of Oklahoma reservoirs is problematic.
- Conducting both bathymetric mapping & yield studies on many community reservoirs.
- After we have those in place, we can then thoughtfully plan dam improvements, dredging, etc.
- Forecasting will become an increasing factor in these planning efforts – ex. Dam Safety.

Forecasting & Dams

Oklahoma Dam Inventory

(Jurisdictional Dams by Agency and Hazard Classification)



The OWRB coordinates the Oklahoma Dam Safety Program to ensure the safety of over 4,700 dams in the state. The Oklahoma Dam Inventory is a collection of state jurisdiction dams as well as federally owned and operated dams. For more information please visit the OWRB's web site at: (<http://www.owrb.ok.gov>) 2/2/2018



Forecasting & Dams

DamWatch | NRCS Welcome, yuengy system-admin admin main menu support

▼ Geography

Back to State Level

Oklahoma

County

Project

RUC

▼ Search

Submit

▼ Data Sources

Map, Satellite, Street View, etc.

Dams OK01517 - Cottonwood Creek 33

General Design Sponsors Data Sources PDLs EAP Files File Alerts Tickets Forms Nearby Structures

Zoom To Structure

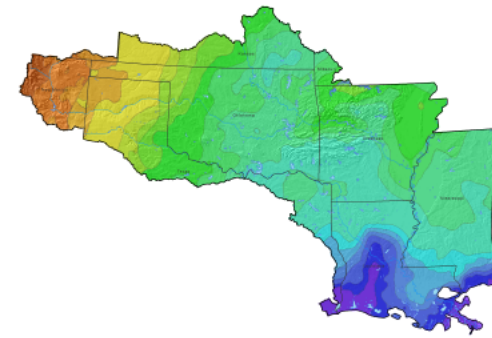
Display Drainage Basin

Dam Name:	Cottonwood Creek 33	NID:	OK01517
Other Dam Names:		Watershed Name:	Cottonwood Creek
Watershed Project Code:	OK2023	Program Authorization:	WS
Latitude:	35.6133	Longitude:	-97.7054
Nearest City/Town:	Piedmont	Distance City/Town (mi):	4
County:	Canadian County	River or Stream:	Tr-Deer Creek
Year Completed:	1966	Year Modified:	

Regional Probable Maximum Precipitation Study For Oklahoma, Arkansas, Louisiana, and Mississippi Final Report

Prepared for:

Arkansas Dept. of Natural Resources
Louisiana Dept. of Transportation & Development
Mississippi Dept. of Environmental Quality
Oklahoma Water Resources Board



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Challenges

- There are unique challenges faced by small vs. large water utilities/entities, rural vs. urban settings, etc., when it comes to accessing data and forecasts.
 - Staff limitations – heavily operational vs. data & strategic planning
 - Technology limitations in many rural areas
 - Qualification: OK MESONET
 - OWRB/USGS gaging

SAVE THE DATE

40th Annual Oklahoma
Governor's Water Conference
and Research Symposium

December 4-5, 2019

Reed Center, Midwest City

Thank You!

The screenshot shows the website for the Oklahoma Water Resources Board (OWRB). The header includes the text "theoklahomawaterresourcesboard" and "thewateragency". A navigation bar contains links for "Board Meetings | Rules | Forms | FAQ | Reports | OCWP | About Us | News". A left sidebar lists various services: "Water Use Permitting", "Financial Assistance", "Well Drilling", "Water Quality Standards", "Monitoring & Assessment", "Groundwater Studies", "Surface Water Studies", "Dam Safety", "Floodplain Management", "Drought Management", and "Interactive Maps & Data". The main content area features a "60 YEARS" anniversary banner with the text "OKLAHOMA'S WATER AGENCY SINCE 1957" and the tagline "INNOVATION • COLLABORATION • SOUND SCIENCE • SERVICE". Below this are several topic tiles: "Water For 2060", "Oklahoma Drought Portal", "Oklahoma Comprehensive Water Plan", "Oklahoma Water News", "Lakes of Oklahoma", and "Interactive Maps & Data". A "News" section lists recent grants, and a "Calendar" shows upcoming events like "Board Meeting" and "Water Appreciation Day". A "Resources" section is partially visible at the bottom. Red arrows point from the "Interactive Maps & Data" link in the sidebar to the "Interactive Maps & Data" tile, and from the "Water For 2060" tile to the "Water For 2060" tile. Another red arrow points from the "Interactive Maps & Data" link in the sidebar to the "Interactive Maps & Data" tile. A fourth red arrow points from the "Interactive Maps & Data" link in the sidebar to the "Interactive Maps & Data" tile.



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