



US Army Corps of Engineers



Tulsa District

Projects Impacting Federal Power
Southwestern Federal Hydropower Conference
Bryan K. Taylor

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Lake Texoma Reallocation

- Lake Texoma was constructed in 1944.
- Purposes now include flood control, water supply, hydroelectric power, regulation of Red River flows, improvement of navigation, and recreation.
- The 1986 WRDA authorized water supply reallocation up to an additional 300K acre-feet from hydropower storage (the conservation pool).
- The subsequent reallocation study examined the need for additional water supply, a wide range of alternative sources to meet needs, and evaluated the benefits and impacts of the Congressional authorization for Lake Texoma storage reallocation.



Lake Texoma Reallocation

- The economic conclusions of Texas State Water Plan were confirmed regarding use of Lake Texoma water.
- Texas has an immediate need for water supply and that need would most economically be met by reallocation from Lake Texoma.
- The **next** most likely source would be construction of a Lower Bois D'Arc reservoir with storage costs at just over 10 times the costs of storage reallocation at Lake Texoma.
- Conservation storage reallocation was economically feasible.



Lake Texoma Reallocation

- Impacts to the environment, flood control, recreation, and hydropower were evaluated.
- The SWPA agrees that water supply is the highest and best use of water, but they have expressed a number of concerns.
- Review by Assistant Secretary of the Army for Civil Works is underway.
- The water supply users are prepared to reimburse the Federal investment of storage at a cost of about \$60M, plus continuing O&M costs.



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Lake Texoma Reallocation

- District POC:

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Interior Least Tern Update

▪ 2008 Breeding Season Survey Results:

- **Arkansas River System:** 702 adults, 154 fledglings. Exceeded compliance goals. 4-year averages exceed compliance goals.
- **Red River:** 625 adults, 146 fledglings. Exceeded goal for adults, less than goal (by 9) for fledglings. 4-year average less than goals for both adults and fledglings.

▪ Habitat Mapping:

- Significant effort during late 2008/early 2009.
- In accordance with Biological Opinion requirements, sandbar habitat mapped on Red, Canadian, Arkansas (below Keystone only).
- Arkansas below Kaw Dam not mapped owing to high water.
- American Bird Conservancy summary report to be completed Summer 2009.

▪ Habitat Creation:

- One area below Kaw Dam completed and Zink Island re-worked.
- Biological Opinion calls for additional (and total) habitat creation by April 2010.
- Will be challenge to complete.

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Interior Least Tern Update

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Arkansas River Corridor

- Purpose of study is to address ecosystem restoration opportunities for a 42-mile stretch of the Arkansas River, from Keystone Dam to the Tulsa \ Wagoner County boundary.
- Planning Assistance to States Projects produced Ecosystem Restoration Plan, Master Plan, and Vision Plan.
- Construction has been authorized (Section 3132 WRDA 2007)
- Implementation Guidance requires a Feasibility Study
- No anticipated impacts to hydropower



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Arkansas River Corridor

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Lake Eufaula Advisory Committee

- **Committee Objective:** To provide information and recommendations to the Corps for operation of Lake Eufaula to balance uses of the lake
 - Authorized by Section 3133 of WRDA 2007
- **Committee Composition:** Members will equally represent the project purposes for Lake Eufaula, which are: flood control, water supply, hydroelectric power, navigation, fish and wildlife and recreation
- Subject to appropriation of funds the Corps will conduct a reallocation study at federal expense
- Development of Interim Pool Management Plan
 - Subject to approval of reallocation study and funding availability
 - Considers recommendations of Lake Eufaula Advisory Committee
- **Current Status:** Assembling draft charter/documentation for submittal to Department of the Army Committee Management Officer for approval

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Lake Eufaula Advisory Committee

- District POC:

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Broken Bow Reallocation

- Study purpose is to provide for the reallocation of water supply for the Mountain Fork Trout Fishery; no expense to the State of Oklahoma.
- Study examined a range of Alternatives
- Pool rise of 3 feet; flood storage was identified as an alternative
- Current Hydropower outputs would be maintained
- Substantial impacts to cultural resources
- Mitigation of cultural resources remains unresolved



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Broken Bow Reallocation

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Arkansas River Navigation Study Update

- **Study Completed 2005:** Examined 3 elements
 - System Flow Management
 - Navigation Channel Maintenance
 - Channel Depth

- **Each Element Examined:** Beneficial and adverse impacts in terms of flood control, water supply, hydropower, navigation, fish, wildlife, and recreation.

- **Selected Plans:**
 - Add new dredged material disposal sites in Oklahoma
 - Replacing existing flow management plan with new flow management plan
 - Increase depth of the Navigation Channel from 9 feet to 12 feet



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Arkansas River Navigation Study Update

District POC:

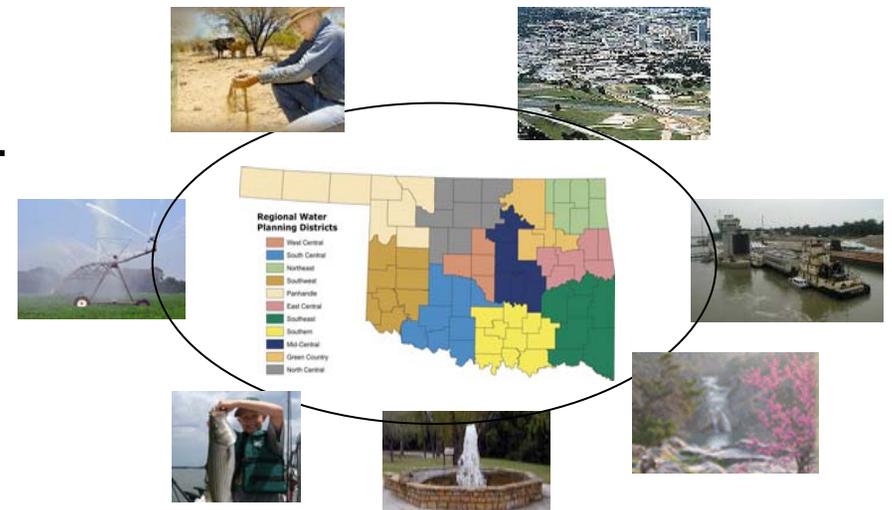
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The Oklahoma Comprehensive Water Plan

- Leverage State funds with Federal funds to provide technical support and objective input with regard to State water resources now and for the future.
- Provide input with regard to Corps reservoir infrastructure, water supply storage, and system operations.
- Facilitate activities, associated with pertinent regional/national programs, that could benefit the OCWP.

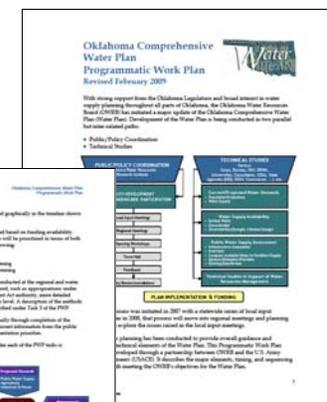
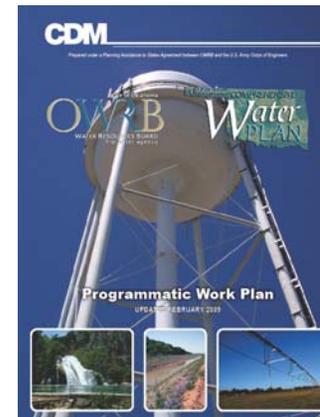


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The Oklahoma Comprehensive Water Plan

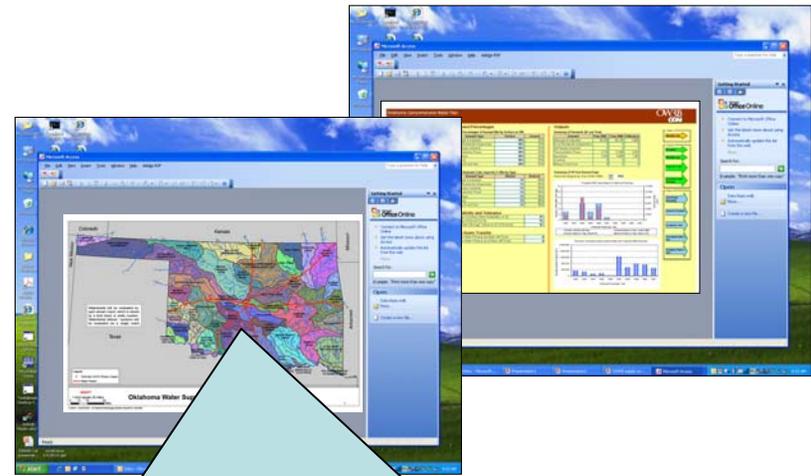
- In 2008 State funds were leveraged with Federal funds to develop the initial Programmatic Work Plan (PWP). The PWP, periodically updated based on new information, provides a framework “road map” for the collaborative development of technical products and coordination with the public/policy process.





The Oklahoma Comprehensive Water Plan

- In 2009 State funds are being leveraged with Federal funds to develop a Preliminary “Shared Vision” Physical Supply Availability Screening Tool.



When fully developed, the screening tool will help prioritize watershed, bedrock aquifer, and alluvial aquifer systems that would require more detailed assessments to proactively address potential issues in the future associated with water supply gaps.



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The Oklahoma Comprehensive Water Plan

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