



US Army Corps of Engineers
Little Rock District, Southwestern Division



LITTLE ROCK DISTRICT STUDIES AFFECTING FEDERAL HYDROPOWER

FEDERAL HYDROPOWER CONFERENCE – JUNE 2011



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Impaired Waterbody Listing 303 (d)

***Dardanelle, Bull Shoals,
Norfolk, Taneycomo***



CURRENT ISSUES

- **TMDL's completed for Bull Shoals and Norfolk (May 2009)**
- **TMDL for Dardanelle is still being developed**
- **TMDL for Lake Taneycomo was approved by the EPA for low dissolved oxygen on 30 December 2010**



DISTRICT POSITION

- Full understanding of the sources contributing to the low DO have not been identified.
- Hydropower is a conduit and not a source.
- Options identified to improve DO are costly.
- Recommend re-evaluation of state standard or designated use of stream.



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WHITE RIVER MINIMUM FLOWS STUDY



FY2006 Energy & Water Act

Directed the Corps of Engineers to Reallocate storage within Bull Shoals and Norfolk Lakes to be used to maintain minimum flows for the downstream trout fishery in the following amounts:

Bull Shoals Lake (BS-3)	5 feet
Norfolk Lake (NF-7)	3.5 feet

BS-3 is a flood pool reallocation, NF-7 has 1.75 feet reallocated from conservation pool and 1.75 feet from flood pool.

Beaver Lake, Table Rock Lake and Greers Ferry Lake were De-Authorized under Sect 132(C) of the 2006 Energy and Water Development Appropriation's Act.



CURRENT STATUS

- Signing ceremony for Norfolk PPA held in July 2010.
- Contract for design of Bulkhead and Siphon at Norfolk awarded in Fall 2010.



Steps to Implementation

- Lakeside Facility PPA at Bull Shoals must be executed. (Norfolk Lakeside Facilities complete)
- Construction of Norfolk Bulkhead and Siphon and modification to SCADA. Siphon underway but delayed due to high water.
- Storage must be captured.



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Arkansas River Navigation Project



Study Purpose/Background

- Study examined two opportunities:
 - ✓ I - Improve navigation by improving the efficiency and effectiveness of evacuating high flows out of Oklahoma reservoirs. (have been using 60k cfs bench at Van Buren since October 2005)
 - ✓ II - Improve navigation by deepening the channel on the entire system and widening the Verdigris River.



Current Status

- **Construction Funds provided in FY05 and executed in FY06, FY07, FY08.**
- **No additional funds received in FY11 or expected in FY12.**
- **\$185 million in remaining total cost broken down in increments between \$1 million to \$10 million.**



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WHITE RIVER BASIN COMPREHENSIVE STUDY



Project Origin

Secretary Westphal ASA (Civil Works) received several letters from the environmental community requesting a basin-wide comprehensive study of the White River.



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WHITE RIVER BASIN, AR & MO

LEGEND

- EXISTING RESERVOIR OR LAKE
- WHITE RIVER NATIONAL WILDLIFE REFUGE
- CACHE RIVER WILDLIFE REFUGE
- WHITE RIVER BASIN



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- **Watershed Comprises**
 - **Approximately 27,765 square miles**
 - **Southern Missouri (10,622 square miles)**
 - **Northern and Eastern Arkansas (17,143 square miles)**
 - **Over 150 miles of flood control levees along the White River and its tributaries.**
 - **Significant migratory waterfowl wintering area.**
 - **Several Federal wildlife refuges and State wildlife management areas.**
 - **One of the largest remaining areas of bottomland hardwood forests in the Mississippi Valley.**
 - **Five Corps Multipurpose Lakes and one flood control only Lake**
 - **Interests within the basin includes**
- **Flood control, water supply, hydropower, navigation, environmental restoration and protection, and recreation.**



Why is the study needed?

- To identify impacts from development in the upper basin & increased competition for water in the lower basin.
- To better forecast future conditions.
- Decisions concerning the basin need to be based on science and not speculation.
- Water resource decisions are key to the future of the basin.



Study Product

- **Watershed Resources Management Plan**
 - **Identifies the combination of recommended actions to be undertaken**
 - **Identifies various partners and stakeholders responsible for recommended actions**
 - **May or may not identify further Corps studies or implementation projects.**



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WATER SUPPLY STORAGE REALLOCATIONS



M&I Water Supply Reallocation Studies ***Greers Ferry Lake***

- **Mid Arkansas Water Alliance (15 mgd, 18,751 AF)**
 - **Assistant Secretary of the Army for Civil Works approved agreement, report, and Environmental Assessment on 22 April 2010**
 - **Agreement was signed on 5 May 2010**
- **City of Heber Springs (3,538 AF) – On hold**



M&I Water Supply Reallocation Studies (Requests) Norfolk Lake

- City of Mountain Home (5 mgd)
- Baxter County Water Association (5.8 mgd)



M&I Water Supply Reallocation Studies Bull Shoals Lake

- Assistant Secretary of the Army for Civil Works approved agreement, report, and Environmental Assessment on 9 August 2010
- **Ozark Mountain Regional Water Alliance (6 mgd, 11,886 AF)**
 - Agreement was signed on 27 August 2010
- **Marion County Regional Water District (1 mgd, 1,698 AF)**
 - Agreement was signed on 8 September, 2010



M&I Water Supply Reallocation Studies ***Beaver Lake***

- **Reallocation Study is in progress. Expected completion in FY12.**
 - **Washington Regional Public Water Authority 2000 (8 mgd)**
 - **Carroll-Boone Water District 2001 (6 mgd)**
 - **Madison County Regional Water District 2006 (8 mgd)**



M&I Water Supply Reallocation Studies (Request) Table Rock Lake

- **Tri-State Water Resource 2007 (50,000 AF)**
 - **Currently we have a water demand study for SW Missouri, this is the first step in determining a water demand need.**



Greers Ferry Modified Seasonal Pool

- **1998- Agreement Drafted Between Corps and SWPA**
 - **Hold Pool at El 463 from 1 April to 1 October.**
- **1999- Draft Agreement Put On hold Due to White River Minimum Flow Study.**
- **2000 thru 2006- Temporary Deviations Allowed to 462.5.**
- **2007- No deviation allowed due to possible impact on tree damage litigation on the White River.**
- **2010 Courts found in favor of Corps, however a Deviation is no longer considered an option. A change to the water control plan would be needed to resume 1998 Agreement.**



Pine Mountain Dam

- Authorized in 1965 and reevaluated in 1980
- Authorized plan includes the construction of a dam on Lee Creek approximately 12 miles north of Van Buren
- August 2010, at the request of the Board of Directors of the River Valley Regional Water District (RVRWD) Little Rock District suspended the GRR and EIS
- Cultural Resource Inventory study was completed
- Remaining elements of report were terminated
- Report has been suspended until sponsor determines the economic conditions warrant analysis of additional water sources in the region.



Interior Least Tern

- Biological Opinion requires the building of habitat (SWL & SWT Collaboration on MKARNS).



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Questions?