

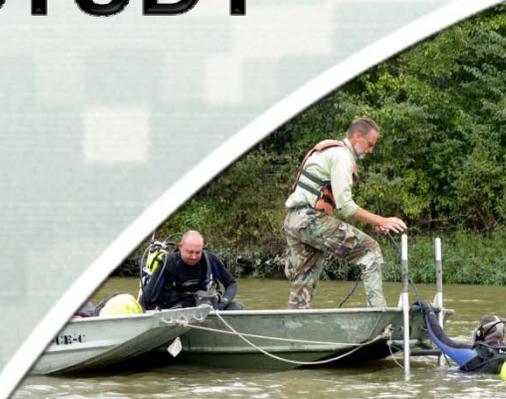
WHITE RIVER BASIN COMPREHENSIVE STUDY

Presenter: CLYDE HUNT

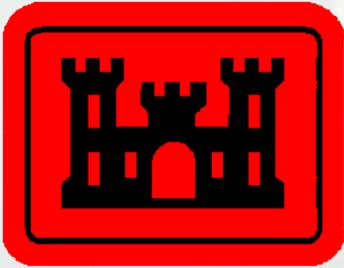
Project Manager

Memphis District

24-25 August 2010



US Army Corps of Engineers
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US Army Corps
of Engineers
Memphis District

Brief History

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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History

- Environmental organizations include:
 - ▶ National Audubon Society
 - ▶ Defenders of Wildlife
 - ▶ National Wildlife Federation
 - ▶ National Wildlife Refuge Association
 - ▶ The Nature Conservancy
 - ▶ Natural Resources Defense Council
 - ▶ Wildlife Management Institute
 - ▶ The Wilderness Society
 - ▶ The Sierra Club
 - ▶ The Mississippi Flyway Council
 - ▶ U.S. Fish and Wildlife Service



Authorization/Appropriation

- WRDA 1986, Section 729 authorized the study of water resource needs of river basins and regions of the U.S.
- WRDA 2000 established cost-sharing requirements.
 - ▶ Federal – 50%
 - ▶ Non-Federal – 50% (work-in-kind 25%)
- WRDA 2007 established new cost-sharing requirements.
 - ▶ Federal – 75%
 - ▶ Non-Federal – 25%
- FY 2001 - Initial Work Allowance Received (\$375,000)



Feasibility Cost Sharing Agreement

- Initial FCSA Executed – May 22, 2002
 - ▶ Cost Sharing Reflected (Federal - 50% & Non-Federal -50%)
- Amendment 1 to FCSA Executed – April 6, 2009
 - ▶ Cost Sharing Reflected (Federal - 75% & Non-Federal - 25%)



Project Sponsors

- Arkansas Game & Fish Commission
- Arkansas Natural Heritage Commission
- Arkansas Natural Resources Commission
- Arkansas Waterways Commission
- Missouri Department of Conservation
- Missouri Department of Natural Resources
- The Nature Conservancy of Arkansas

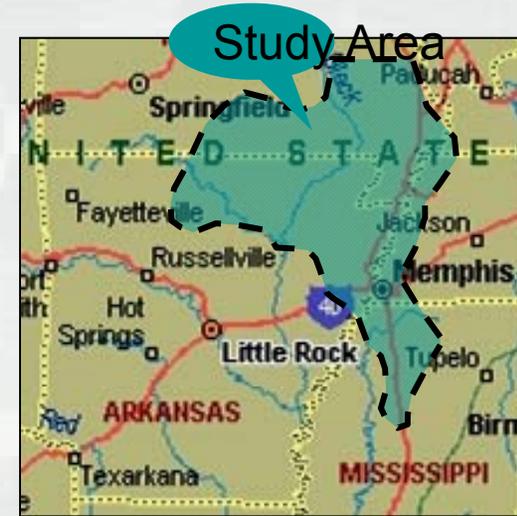


Interagency Planning Team

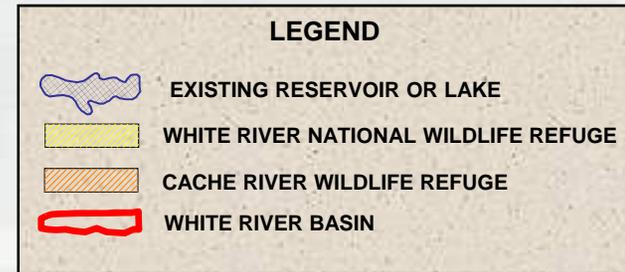
- Provides involvement with key resource agencies/organizations.
- Provides an opportunity to coordinate with stakeholders.
- Provides input, expertise, & different perspectives into defining the critical resources & efforts needed to identify problems & opportunities.
- Provides expertise in developing solutions.



White River Basin Arkansas & Missouri



VICINITY MAP



Hurricane Lake Wildlife Management Area in White River Basin **BUILDING STRONG®**

Scope of Project

- 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
- Interests within the basin includes
 - ▶ Flood control, water supply, hydropower, navigation, environmental restoration and protection, and recreation.



Purpose of Study

- Apply a multi-purpose approach to watershed planning that accommodates flexibility and collaboration in the formulation and evaluation process.
- Areas of investigation may include water supply, natural resources preservation, ecosystem restoration, environmental infrastructure, recreation, navigation, flood management activities, and regional economic development.



The Need For the Study is:

- Due to the increased development in the upper basin & competition for water in the lower basin.
- To understand future conditions.
- To develop sound science as basis for decisions – not just speculation.
- Because decisions on water may be the key to the future of the basin.



Study Outputs

- Inventory & forecast critical resources in the basin
 - ▶ Existing, future, & natural ecosystem conditions
- Identify water resources related problems & opportunities
- Propose solutions and identify benefits and impacts



Study Cost Estimate

Federal Cost	\$6,411,075
Non-Federal Cost	<u>\$2,137,025</u>
Total	\$8,548,100

Federal Funding to Date - \$3,220,446

Non-Federal Funding to Date - \$1,734,302



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Sponsors Contribution To Date

Cash to date – Missouri \$427,615

Cash to date – Arkansas \$232,900

Total \$660,515

Work-in-Kind - \$1,073,787



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Cost Allocation To Date

Fiscal Year	Total	Non-Fed Work-in-Kind	Non-Fed Cash	Federal Cash	Activity
Prior	\$159,753	0	0	\$159,753	Reconnaissance
Prior	\$4,237,995	\$1,073,787	\$561,515	\$2,602,693	Feasibility
2008	\$240,000	0	\$100,000	\$140,000	Feasibility
2009	\$215,000	0	0	\$215,000	Feasibility
2010	\$103,000	0	0	\$103,000	Feasibility
Total	\$4,955,748	\$1,073,787	\$661,515	\$3,220,446	



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.



Scheduled Tasks Timeline

ITEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Environmental Coordination	X	X	X	X	X	X	X
Basin Ecosystem and Uses Relationships (Conceptual Model) - COMPLETED							
Literature/Data Search	X	X	X	X			
Environmental Appendix						X	X
Aquatic Ecosystems Sub-Basin Assessments			X	X			
Watershed Restoration Plans				X	X		



Scheduled Tasks Timeline

ITEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Aquatic Ecosystem-Wild & Scenic Rivers and National Rivers				X			
Fish and Wildlife Coordination	X	X	X	X	X	X	X
Hydrological Effects on Lower Basin Wetlands (King Study)			X	X	X	X	X
Satellite Imagery (Data for King Study)			X	X			
Elevation Surveys (Data for King Study)			X	X			
Extensive Hydraulic Modeling (Data for King Study)				X	X	X	
Stage/Discharge on Cache River and Bayou DeView (Data for King Study)				X	X		



Scheduled Tasks Timeline

ITEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14
10-Day Average MSL Stage on Mississippi @ Mouth of White (Data for King Study)				X	X		
Gather MSS or TM Imagery on White main stem, Cache and Bayou DeVew (Data for King Study)				X	X		
Surveys, Cross Sections - COMPLETED	X	X					
Terrestrial Habitat Evaluation				X	X		
Wetlands Evaluation				X	X		



Scheduled Tasks Timeline

ITEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Migratory Birds Evaluation				X	X		
Endangered / Threatened Species Evaluation				X	X		
Evaluation of Permanent Wetlands in Lower White River				X			
Evaluation of Ecosystem Restoration Options in Lower White River Basin (Heitmeyer Study) DRAFT COMPLETED	X	X	X	X			
Navigation / Transportation Needs					X	X	
People and Economy					X		
Recreation – COMPLETED PHASE 1	X	X	X				
Groundwater / Agricultural Water Supply				X	X		
Water Supply / Wastewater Treatment				X	X		



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Scheduled Tasks Timeline

ITEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Hydropower / Power Generation Needs					X		
Flood Control Assessment				X	X	X	
Aquatic Ecosystem – Lakes/Reservoirs				X	X	X	
Quantify Water Quality in Beaver Lake - COMPLETED			X				
Quantify Water Quality in Table Rock Lake				X			
Quantify Water Quality in Lake Taneycomo				X			
Aquatic Ecosystem Fisheries Studies COMPLETED	X	X	X				



Scheduled Tasks Timeline

ITEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14
GIS				X	X	X	
GIS – Pilot Project				X	X	X	
GIS – Data Management				X	X	X	
Ecologically Sustainable Water Management (ESWM)					X	X	
Planning and Project Management	X	X	X	X	X	X	X



Work Items Status

ITEM	% COMPLETE	STATUS
Wetland Effects of Blockage Removal at Grubbs (Dr. Heitmeyer)	70	Fully funded contract with URS
<i>Study-Evaluate Environmental Benefits of Sediment Reduction (Dr. Heitmeyer)</i>	90	<i>Big Creek Sub-Basin</i>
<i>Evaluate Ecosystem Restoration Options (Dr. Heitmeyer)</i>	95	<i>Cache River and Bayou DeView Basins</i>
Forebay Oxygen Diffuser Report	95	Initiated by TVA FY08 on Table Rock Lake; Work promoted by MO Dept. of Conservation. March 2009 additional work added to TVA scope.
Sedimentation Study	80	NRCS submitting Big Creek data; USDA-ARS agreement pending-D&F with subsequent MIPR being processed
Water Quality Analysis - Upper White River	50	FY07 work complete; D&F at MVD for similar FY08 work for MO DNR



Work Items Status

ITEM	% COMPLETE	STATUS
Conceptual Model	100	
Beaver Lake Water Quality Model	100	2-D Study
Delineate & Digitize Hydrologic Units	100	
Aquatic Ecosystem Fisheries Study	95	Final report due from ERDC
Recreation Study, Phase I	100	ERDC completing report – March 2008
Unsteady Flow Model	80	Mouth to Clarendon complete; Clarendon to Newport In-progress. Field data collection 95% complete.
Cache River Surveys	100	Completed 15 cross sections
Ecologically Sustainable Water Management (ESWM)	0	



Report Timeline

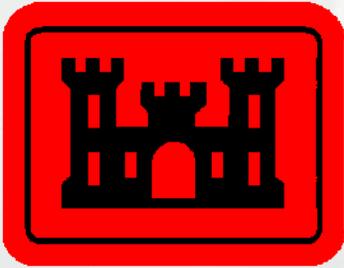
ITEM	FY10	FY11	FY12	FY13	FY14
Update PMP	X	X	X	X	X
Assess Completed Tasks & Compile Reports	X	X	X	X	
Draft Write-up of Existing Conditions	X	X	X		
Draft Write-up of Future Without Project Conditions	X	X	X		
Draft Write-up of Desired Future Conditions	X	X	X		
Draft Write-up of Plan Formulation Process	X	X			
Draft Write-up of Watershed Plan Recommendations		X	X	X	
Compile Draft Main Report with Supporting Appendixes			X	X	



Report Timeline

ITEM	FY10	FY11	FY12	FY13	FY14
Technical Review of Draft Feasibility Report				X	
Conduct Alternative Formulation Briefing (AFB)				X	
HQ issues AFB Guidance Memorandum				X	
District Address Comments To Draft Feasibility Report				X	
Public Review of Draft Feasibility Report				X	
Finalize Feasibility Report					X
MSC/HQ Approval of Feasibility Report					X





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QUESTIONS?



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