



DEPARTMENT OF THE ARMY  
US ARMY ENGINEER DIVISION, SOUTHWESTERN  
1100 COMMERCE STREET, SUITE 831  
DALLAS TX 75242-1317

REPLY TO  
ATTENTION OF

CESWD-PDS-P (1105)

24 JUL 2009

MEMORANDUM FOR Commander, Little Rock District

SUBJECT: Review Plan for Mid-Arkansas Water Alliance Water Supply Reallocation Report and Environmental Assessment

1. References:

- a. EC 1105-2-410, 22 August 2008, Review of Decision Documents.
- b. Memorandum, CECW-CP, 30 March 2007, subject: Peer Review Process.
- c. Addendum to Reference 1.b., CECW-CP, September 2008, subject: Supplemental Information for the Peer Review Process.

2. The review plan for the subject study, enclosed, has been reviewed and cleared for approval by the Water Management and Reallocation Studies Planning Center of Expertise. It has been prepared in accordance with the referenced guidance, and public comments received will be incorporated into the plan as the study progresses. It does not require Independent External Peer Review.

3. I hereby approve this review plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent substantial revisions to this plan or its execution will require new written approval from this office.

4. If you have questions or need further information, please contact Peter H. Shaw, CESWD-PDS-P, at (469) 487-7038.

Encl

KENDALL P. COX  
Brigadier General, USA  
Commanding

CF:  
CESWL-PE (Smethurst)



**Review Plan  
for  
Mid-Arkansas Water Alliance  
Water Supply Reallocation Report  
and Environmental Assessment**

**U. S. Army Corps of Engineers, Little Rock District  
September 2008  
Revised 10 April 2009**

*End*

# Mid-Arkansas Water Alliance Water Supply Reallocation Report and Environmental Assessment

## Peer Review Plan

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**1. Purpose.** This document presents the process that assures quality products for the Mid-Arkansas Water Alliance Water Supply Reallocation Report and Environmental Assessment according to the Guidance set forth in EC 1105-2-410. This Review Plan (RP) defines the responsibilities and roles of members of the study and technical review team. This plan is in compliance with the Little Rock District (SWL) Quality Assurance (QA) Plan. The basis for the QA Plan is the SWL Quality Management Plan. The QA Plan will be followed in verifying that the QC process operates as planned. This RP is a component of the Project Management Plan.

**2. References.**

- ER 1105-2-100 “Planning Guidance Notebook & Appendices D, F, G and H
- EC 1105-2-408 “Preer Review of Decision Documents”, dated May 31, 2005
- EC 1105-2-410 “Review of Decision Documents”, dated August 22, 2008

**3. Applicability.** All decision documents and their supporting analysis are required to undergo District Quality Control (DCQ) and Agency Technical Review (ATR). The RP applies to all feasibility and reevaluation studies and reports needing authorization. Although the MAWA Water Supply Reallocation Report and Environmental Assessment does not need Congressional authorization, as a decision document, it requires ATR. The RP identifies the ATR process for all work conducted as part of the study, including in-house, non-Federal sponsor in kind and contract work efforts. According to the guidance set out in EC 1105-2-410, the MAWA Water Supply Reallocation Report and Environmental Assessment does not need to complete an Independent External Peer Review (IEPR).

**4. Background.** Greers Ferry Lake is a multipurpose project with flood control, hydropower, recreation, water supply, and fish and wildlife as project purposes. The Mid-Arkansas Water Alliance (MAWA) serves over one million people in the central area of Arkansas. The Mid-Arkansas Water Resource Study (Section 22), completed November 2002, identified Greers Ferry Lake and Lake Ouachita as the water sources most capable of meeting the Central Arkansas region’s water demands. The subject Water Supply Reallocation report presents the results of a study to reallocate storage in Greers Ferry Lake and Lake Ouachita to MAWA for municipal and industrial (M&I) water supply. The reallocation study comes at the request of the MAWA to purchase enough storage to yield 15 mgd (million gallons per day) in Greers Ferry Lake and 20 mgd in Lake Ouachita.

A reallocation of 18,730 acre-feet, within the Chief of Engineers discretionary authority, is available at Greers Ferry to provide MAWA’s requested 15 mgd yield, and will help meet the needs of central Arkansas through the year 2025. This storage represents 2.01% of the current 934,000 acre-feet of flood storage in the lake or 1.13% of the current 1,650,500 acre-feet of useable storage in Greers Ferry Lake. The top of the conservation pool would be increased by 0.6 feet. While the Corps reallocation authority is for storage and not dependable yield, the intent and actual calculations are based on using the dependable yield requested by the customer to determine the amount of storage that will provide that yield. As stated in the Water Supply Handbook, IWR Report 96-PS-4 (Revised), page 2-3, "*Repayment agreements for storage space*

*will base the amount of storage to be provided on the yield required by the non-Federal sponsor."*

The report also concluded that 33,303 acre-feet of storage in the flood pool is available and could be reallocated to MAWA in Lake Ouachita to provide an expected yield of 20 mgd to meet the needs of central Arkansas through the year 2025. This storage represents 5.40% of the current 617,000 acre-feet of flood storage in the lake or 1.75% of the current 1,903,000 acre-feet of useable storage in the lake. The top of the conservation pool would increase by about 0.82 feet.

In May 2006, as part of the dam safety program, a risk assessment screening was performed for Blakely Mountain Dam at Lake Ouachita. This screening determined the dam may be at risk for failure from seepage and piping due to construction methods and the apparent lack of an adequate seepage blanket. This resulted in the dam being classified as Dam Safety Action Classification II (DSAC II). The DSAC II dams are unsafe or potentially unsafe. Interim risk reduction measures are required to be implemented for dams with this classification. A seepage monitoring system has been designed to evaluate any deterioration of the core material. This monitoring system is scheduled for implementation in FY 2009. Once the monitoring system is constructed, additional time will be required for monitoring purposes. It will take a minimum of two years to determine the dam's condition and fully recommend risk reduction measures. Depending on that determination it could be numerous additional years to reclassify the dam from DSAC II to III or IV. Corps Dam Safety policies do not allow raising the flood pool at lakes with a dam classified as DSAC II or DSAC I. Since Blakely Dam cannot be reclassified to a higher DSAC classification in a timely fashion, MAWA members have requested a conservation pool reallocation at Lake Ouachita and are no longer seeking a flood pool reallocation. Due to the urgent need for water supply in the Central Arkansas region and the timing of the DSAC determination at Lake Ouachita, this report still contains information about both Greers Ferry and Lake Ouachita, but only the Greers Ferry Lake storage reallocation will be pursued at this time. The Greers Ferry Lake and Lake Ouachita reallocations are two completely independent actions. The lakes have no environmental, economic, ecological, or hydraulic connections. The only reason the storage reallocations for both lakes are considered together in this report is because a November 2002 Planning Assistance to States (PAS) Study identified the best alternative for obtaining water for central Arkansas would be to purchase discretionary storage in Greers Ferry Lake and Lake Ouachita. MAWA acted on the study findings and requested storage for both lakes.

**5. Project Title, Subject and Purpose of the Decision Document.** The document title and subject is: "Greers Ferry Lake and Lake Ouachita, Arkansas, Water Supply Storage Reallocation Report, Reallocation of Storage at Greers Ferry Lake and Lake Ouachita, Arkansas for the Mid-Arkansas Water Alliance, May 2009". MAWA's request for a change in use of storage at Greers Ferry Lake and Lake Ouachita from its present use to a Municipal & Industrial (M&I) water supply use is authorized by the Water Supply Act of 1958. The MAWA Reallocation Study was initiated prior to issuance of US Army Corps of Engineers Engineering Circular 1105-2-408 dated 31 May 2005; Subject: Peer Review Documents, which was superseded by Engineering Circular 1105-2-410 dated 22 August 2008; Subject: Review of Decision Documents. However, peer review has been a part of the development of the study report, as well as close public and agency coordination. The Tulsa District, the Corps of Engineers Hydropower Analysis Center,

and the Vicksburg District have all played an active role in review of the analyses and documentation associated with the study. The purpose of this review plan is to insure that the review of the study's analyses and documentation meets the spirit of independent review as well as complying with the most current regulation related to Corps of Engineers Civil Works decision documents. Specifically, the review plan is developed in accordance with Appendix B of EC 1105-2-410, with the content following that which is identified in paragraph 4 of that appendix. The review team is required to have expertise in multipurpose reservoir economics, flood risk management, hydropower, National Environmental Policy Act (NEPA) related analysis, and water resources plan formulation.

Questions regarding the review plan should be directed to the following:

**Analysis and Report Preparation:** Julia Smethurst, Project Manager, Little Rock District

**Agency Technical Review:** Ed Rossman, Review Team Lead, Tulsa District

**Planning Center of Expertise:** Water Management and Reallocation Studies, Peter Shaw, Southwestern Division

**Southwestern Division POC:** Margaret Johanning

**6. Influential Scientific Information and Level of Review.** The report does not contain novel or precedent-setting approaches or influential scientific information. The study analyses, while complex, are well within the scope that is typical of similar reallocation studies. Consequently, the recommendation of the District, with Major Subordinate Command (MSC) concurrence, is that the level of review be Agency Technical Review (ATR) only. The Little Rock District has concluded that the MAWA Water Supply Storage Reallocation Report does not require independent external peer review, as defined in the Water Resources Development Act (WRDA) of 2007 (Public Law 110-114), and EC 1105-2-410 for the following reasons:

a. Study efforts for this project started in 2002. WRDA 2007 Section 2034, Paragraph (h) (1), Applicability, states that Section 2034 is applicable to studies initiated during the 2-year period preceding the date of enactment of this Act and for which the array of alternatives to be considered has not been identified. At the time of enactment on 8 November 2007, the Little Rock District Corps of Engineers, in preparing an Environmental Assessment (EA), had completed a Reallocation Report including flood pool reallocation scenarios at Greers Ferry Lake and Lake Ouachita. Documentation of the analysis of those alternatives had been coordinated with stakeholders through public scoping meetings, agency coordination, and stakeholder meetings including a 30-day public comment period on a Draft Environmental Assessment during the summer of 2007.

b. WRDA 2007 Section 2034, Paragraph (3)(A)(i), states peer review is mandatory if a project has an estimated total project cost of more than \$45 million and is not determined by the Chief of Engineers to be exempt. The cost to complete the reallocation report at Greers Ferry Lake is estimated at \$100,000. The lump sum payment first cost for MAWA is estimated at \$3,533,913. The reallocation report identifies annual costs for OMR&R (operations, maintenance, repair and rehabilitation) and capital costs at Greers Ferry Lake to be \$226,169.78.

c. EC 1105-2-410, Appendix D, requires Independent External Peer Review (IEPR) if the project poses a significant threat to human life. The MAWA reallocation at Greers Ferry Lake will not adversely affect any fish, wildlife or other environmental resources, and will not impose an increased flooding risk in the project area or elsewhere. Greers Ferry Dam has a DSAC IV rating.

d. EC 1105-2-410, Appendix D, requires IEPR if the Governor of the affected state requests an IEPR. The Governor of Arkansas is not expected to request an IEPR.

e. EC 1105-2-410, Appendix D, requires IEPR if an agency has requested a review due to adverse impacts. No agencies have requested an IEPR.

f. EC 1105-2-410, Appendix D, requires IEPR if there is public dispute of size\nature\effects of the project. No significant public dissent was expressed by the public during the 30-day public comment period in summer 2007. The project has no impact on any species listed as endangered or threatened under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) or the critical habitat of such species designated under such Act. A Finding of No Significant Impact was drafted.

g. EC 1105-2-410, Appendix D, requires IEPR if there is public dispute of economic\environmental benefits\costs of the project. No significant public dissent was discovered during the 30-day public comment period held during the summer of 2007. Accordingly, a Finding of No Significant Impact was drafted.

h. EC 1105-2-410, Appendix D, requires IEPR if the project has novel methods\complexity. The study does not contain any novel or precedent-setting approaches or influential scientific information. The complexity is well within the scope that is typical of these types of studies.

i. EC 1105-2-410, Appendix D, requires IEPR if the project has precedent setting models\policy changing conclusions. The subject water storage reallocation does not change the authorized operating purposes for Greers Ferry Dam, and changes no policies. All models used during the reallocation study are approved and accepted Corps of Engineers engineering models. No planning models were used in the study.

**7. Timing and Sequencing of Reviews.** An initial National Environmental Policy Act (NEPA) scoping process related to the study was initiated 2002. The Reallocation Study was coordinated with and reviewed by Vicksburg District throughout the study process.

The draft final report and EA review timing is listed below:

|   |           | Actual*/Revised |
|---|-----------|-----------------|
| SWL Submit draft for ATR by SWT                   | 22-Sep-08 |                 |
| SWT ATR team First Comments                       | 10-Oct-08 | 19-Oct-08       |
| SWL Response to ATR comments                      | 17-Oct-08 | 3-Nov-08        |
| SWT ATR team Certify Responses Acceptable         | 24-Oct-08 | 17-Nov-08       |
| SWL Submit draft document package to SWD for QA   | 31-Oct-08 | 14-Nov-08       |
| SWD performs QA of draft report submittal package | 5-Nov-08  | 19-Nov-08       |



|   |                 |           |
|---|-----------------|-----------|
| SWL Response to SWD QA comments                     | 6-Nov-08        | 20-Nov-08 |
| SWD Report to HQUSACE on QA                         | 7-Nov-08        | 5-Dec-08  |
| SWL Submit draft submittal package to HQUSACE       | 10 Novr<br>2008 | 15-Dec-08 |
| HQUSACE Initial Review comments                     | 19-Dec-08       | 11-Feb-09 |
| SWL Response to HQUSACE comments                    | 16-Jan-09       | 8-Apr-09  |
| Issue Resolution Conference                         |                 | 23-Apr-09 |
| HQUSACE IRC Discussion Document and Required Action | 30-Jan-09       | 7-May-09  |
| SWL Submit revised document for 2nd ATR by SWT      | 13-Feb-09       | 21-May-09 |
| SWT ATR team comments                               | 20-Feb-09       | 28-May-09 |
| SWL Response to ATR comments                        | 24-Feb-09       | 2-Jun-09  |
| SWT ATR Team Certification                          | 27-Feb-09       | 12-Jun-09 |
| SWL Submit final document package to SWD for QA     | 6-Mar-09        | 24-Jun-09 |
| SWD Completes QA                                    | 13-Mar-09       | 1-Jul-09  |
| SWL Submit final document package to HQUSACE        | 20-Mar-09       | 21-Jul-09 |
| HQUSACE Completes Review                            | 24-Apr-09       | 20-Aug-09 |
| ASA(CW) WS agreement approval                       |                 | 21-Sep-09 |
| Approval of Reallocation Report                     | May-09          | 30-Sep-09 |

**8. Opportunities for Public Comment.** As part of the National Environmental Policy Act (NEPA) public involvement process, a draft environmental assessment along with a draft reallocation report was made available for public comment. The report and draft environmental assessment were posted on the District website on 6 September 2006 with a point of contact for comments and questions. The District held numerous meetings with individual stakeholder groups throughout the course of the study.

**9. Significant Comments Provided to Reviewers.** Comments are documented in the EA and were provided to ATR Reviewers, Division, and Headquarters.

**10. Number and Expertise of Reviewers.** The review team consists of four reviewers from Tulsa District. The team has extensive experience in plan formulation, water supply studies, reallocation studies with hydropower implications, water supply contracts, and the NEPA process. The team lead will be chosen by the PCX and will be from outside the MSC.

The review team includes an

- a. Economist (1), the reviewer shall have extensive knowledge of the principles and guidelines of economic analysis as it relates to models for water supply.
- b. Engineers (2), the reviewers will have extensive knowledge of their field as it applies to water supply. The reviewers will be professionally licensed.
- c. Water supply contract specialist (1). - the reviewer(s) will have a extensive knowledge of current planning policies as they relate to water supply.

**11. Nomination of Professional Reviewers.** Not Applicable to ATR process

**12. Models Used.** The hydrologic model, SUPER, an engineering model was used in assessing the engineering aspects of reservoir operations, lake recreation analysis, flood damage analysis, and water supply yield analysis. No planning models were used in the study.

13. **In-Kind Contributions.** None.

14. **Execution Plan.** Execution of the review plan is described in the following paragraphs:

a. **Expertise.** Southwestern Division, as the Planning Center of Expertise (PCX) for Water Management and Reallocation Studies, has responsibility for certifying the review plan, the level of review, and the review team for approval by the Division Commander. The reviewers were selected from Tulsa District based on their extensive and specialized experience with reallocation studies with hydropower considerations.

b. **Rotation.** Vicksburg District has been a part of the technical review of the study beginning early in the study process. Vicksburg District's role included review of plan formulation, study methodologies and models, final array of plans, and conclusions. On 30 May 2007, Vicksburg provided a memo documenting approval of the draft report. Tulsa District's role as the Agency Technical Review team has been requested based on their familiarity with the complexities of the study and their specialized expertise with reviews related to water supply reallocation.

c. **Conflicts of Interest.** There are no conflicts of interest, as the reviewers are all Federal employees. All reviewers have complied with Federal and Department of Army Ethics requirements.

d. **Independence.** Tulsa District staff has not participated in the development of the report, appendices or other work products reviewed.

e. **Reviewers' Privacy.** Tulsa District has been informed that the names and other personal information of the reviewers will not be disclosed in the final report.

f. **Reviewers' Compensation.** The Little Rock District provides all labor funds for the review. The estimated cost of the review is \$15,000.<sup>[m2]</sup>

g. **Reviewers' Charge.** The PCX charges the review team to review all scientific and technical materials to include review of methods, analysis and formulation of the alternatives and recommended plan; compliance with the NEPA process and completeness of supporting technical documentation. The ATR team will review the documentation and make clear, concise comments, with notation of the section and paragraph to which the comment is directed. The reviewer will state why the comment is important and the consequences of failure to address the comment. The review will also suggest how to address the comment. In a similar fashion the reviewer may offer broad evaluation of the overall document on the basis of scientific and technical merit. All policy determination is the responsibility of Headquarters and the Assistant Secretary of Army.

h. **Confidentiality.** Review will be conducted in a manner that respects business information and intellectual property.

i. **Review Mechanism.** For reasons stated earlier, Agency Technical Review is recommended using a team of reviewers with specialized expertise in water reallocation studies affecting hydropower and other purposes. The purpose of the ATR is to provide in depth review of the technical, engineering and scientific work, managed within the USACE through the appropriate PCX and using a qualified review team outside the home district. The review team has been selected from Tulsa District staff.

j. **Access to Information.** Reviewers will have access to all information used in the analysis and documentation of the report. Any other information maintained by the District will be made available to the ATR team. The study's project manager is Julia Smethurst, who will serve as a POC for all requests for information.

k. **Disclaimer.** Information distributed for review includes the following statement: "This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy."

l. **Public Participation.** The Little Rock District has made the draft documents available for public review. Draft documents were mailed to interested stakeholders and posted on the District website. All the public involvement requirements for NEPA have been and will continue to be met.

m. **Transparency.** The PCX instructs the review team to prepare a review report. The report will disclose the names, background and affiliation of all reviewers. The nature of the review and the ATR team's charge will be presented in the report. A copy of the comments and the associated reviewer will be included. DrChecks will be used to document the ATR process and will aid in production of the review report.

n. **Responses to the Review Report.** Written responses to the review report will be prepared using DrChecks. Responses will include an explanation of how the responses/actions are expected to satisfy the comments/concern documented in the review report. Back check by the reviewers will be documented in DrChecks. The review report and comment resolution will be included as an appendix in the final report. The reviewer's names will be removed from the review report prior to its inclusion in the final report appendix, as per paragraph 11.e. above.

15. **Approval of the Review Plan.** Southwestern Division, the MSC for the Little Rock District, will approve the review plan in accordance with EC 1105-2-410, dated August 22, 2008, Appendix B (page B-5). The MSC will provide a copy of the signed approval memorandum to the Headquarters Southwestern Division Regional Integration Team. The Review Plan is a living document and may be modified as the study continues. Approval of any revisions will follow the process of the original approval. The approved review plan, along with the MSC approval memorandum, will be posted on the District webpage with links to the MSC, PCX, and HQUSACE.

**16. Policy Compliance and Legal Review:** Legal Review will be the responsibility of the district. Policy Compliance will be the responsibility of the PCX.

Appendix A  
PDT

Team Members  
All located at Little Rock District

Project Manager- Julia Smethurst, 501-324-5602  
Dam Safety- Bob Oberle, 501-324-5665 x1440  
HH- Glen Raible, 501-324-6231 x1617  
Economics – William Lehman, 501-324-5612  
Russ Wallace, 501-324-5033

