



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

OCT 17 2008

MEMORANDUM FOR Commander, Little Rock District

SUBJECT: Review Plan Approval for Reallocation of Storage at Greers Ferry Lake and Lake Ouachita, Arkansas for the Mid-Arkansas Water Alliance

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. Document, CECW-CP, September 2008, subject: Supplemental Information for the "Peer Review Process" Memo Dated March 2007.

2. The enclosed Review Plan for the subject study has been prepared in accordance with the referenced guidance.

3. The Review Plan has been made available for public comment, and the comments received have been incorporated. The Review Plan has been coordinated with the Water Management and Reallocation Planning Center of Expertise of the Southwestern Division, which is the lead office to execute the plan. The Review Plan does not include Independent External Peer Review.

4. 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.

5. If you have questions or need further information, please contact Ms. Margaret Johanning, CESWD- PDT at (469) 487-7045.

Encl

BILLY G. TOLLISON
Colonel, EN
Acting Commanding

CF:
CESWD-PDT
CESWL-PE/Biggs

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

U. S. Army Corps of Engineers, Little Rock District
September 2008

1. **Background and Purpose.** 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. The 18,730 acre-feet requested by the MAWA will leave 14,721 acre-feet of discretionary storage in Greers Ferry Lake. 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. At Lake Ouachita, 33,303 acre-feet is available within the Chief of Engineers discretionary authority 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. This reallocation will leave 10,061 acre-feet of discretionary storage in Lake Ouachita.

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 the November 2008 to January 2009 timeframe. 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. Consequently, the last minute DSAC II classification of Blakely Mountain Dam jeopardizes the flood pool storage reallocation at Lake Ouachita. 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.

2. Project Title, Subject and Purpose of the Decision Document. The project title is "Water Supply Storage Reallocation Report". The decision document is titled, "Reallocation of Storage at Greers Ferry Lake and Lake Ouachita, Arkansas for the Mid Arkansas Water Alliance, June 2007". 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: Michael Biggs, 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

3. 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 \$2,744,500. The reallocation report identifies annual costs for OMR&R (operations, maintenance, repair and rehabilitation) and capital costs at Greers Ferry Lake to be \$182,700.

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 any 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 signed June 2007.

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 signed June 2007.

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.

4. 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:

SWL Submit draft for ATR by SWT	22 September 2008
SWT ATR team First Comments	10 October 2008
SWL Response to ATR comments	17 October 2008
SWT ATR team Certify Responses Acceptable	24 October 2008
SWL Submit draft document package to SWD for QA	31 October 2008
SWD performs QA of draft report submittal package	5 November 2008
SWL Response to SWD QA comments	6 November 2008
SWD Report to HQUSACE on QA	7 November 2008
SWL Submit draft submittal package to HQUSACE	10 November 2008
HQUSACE Review comments	19 December 2008
SWL Response to HQUSACE comments	16 January 2009
HQUSACE PGM on finalizing document	30 January 2009
SWL Submit revised document for 2 nd ATR by SWT	13 February 2009
SWT ATR team comments	20 February 2009
SWL Response to ATR comments	24 February 2009
SWT ATR Team Certification	27 February 2009
SWL Submit final document package to SWD for QA	6 March 2009
SWD Complete QA	13 March 2009
SWL Submit final document package to HQUSACE	20 March 2009
HQUSACE Completes Review	24 April 2009
Issue Resolution & Documentation of Review Findings	8 May 2009
Approval of Reallocation Report	22 May 2009

5. 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.

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

7. 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 review team includes an economist (1), engineers (2), and a water supply contract specialist (1).

8. Nomination of Professional Reviewers. Not Applicable to ATR process

9. 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.

10. In-Kind Contributions. None.

11. 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.

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 Michael Biggs, 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.

12. **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.