



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

REPLY TO
ATTENTION OF

CESWD-PDP

07 DEC 2012

MEMORANDUM FOR Commander, Tulsa District

SUBJECT: John Redmond Dam Reservoir, Coffee County, Kansas Reallocation Study (PWI # 008530) Review Plan Approval

1. References:

a. EC 1165-2-209, Civil Works Review Policy, 31 January 2010; and Change 1, 31 January 2012.

b. Memorandum, CESWT-PE-P, 13 April 12, subject: Request for Exclusion from Type I Independent Peer Review (IEPR) for John Redmond Dam reservoir, Coffee County, Kansas, Reallocation Study (PWI # 008530).

c. Memorandum, CESWD-PDP, 19 June 2012, subject: John Redmond Dam Reservoir, Coffee County, Kansas Reallocation Study (PWI # 008530) - Request for Exclusion from Type I Independent External Peer Review (Encl 1).

d. Email, CEMP-SWD, Yvonne Haberer, 3 July 2012, subject: John Redmond exclusion for Type I IEPR (Encl 2).

2. In accordance with the reference 1.a., I hereby approve the enclosed Review Plan (RP) with exclusion from Type I IEPR, subject to the RP being updated in para. 6. to state that IEPR exclusion has been approved by Headquarters, USACE for the subject project study.

3. Reference 1.d. approves the IEPR exclusion request.

4. Please post the final approved RP with a copy of this memorandum to the District's public internet website and provide the internet address to the Water Management and Reallocation Studies Planning Center of Expertise and Southwestern Division. Before posting to the District website, the names of USACE employees should be removed.

0 7 DEC 2012

CESWD-PDP

SUBJECT: John Redmond Dam Reservoir, Coffee County, Kansas Reallocation Study (PWI # 008530) Review Plan Approval

5. The SWD point of contact for this action is Mr. Saji Varghese, CESWD-PDP, at 469-487-7069.

2 Encls
as


THOMAS W. KULA
Brigadier General, USA
Commanding

CF:
SWT-PE-P/ Rossman (w/encls)

REVIEW PLAN

*John Redmond Dam Reservoir, Coffee County, Kansas
Reallocation Study*

Tulsa District

MSC Approval Date: *(enter date of approval, or state 'Pending' if not yet approved)*

Last Revision Date: *(enter date of last revision or 'none' if no changes since last approved by MSC)*



**US Army Corps
of Engineers** ®

REVIEW PLAN

John Redmond Dam Reservoir, Coffee County, Kansas
Reallocation Study

Tulsa District

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1. PURPOSE AND REQUIREMENTS

Purpose. This Review Plan defines the scope and level of peer review for the Final Reallocation Report to the John Redmond Dam and Reservoir, Coffee County, Kansas, Reallocation Study.

a. References

- (1) Engineering Circular (EC) 1105-2-408, Subject Assuring Quality of Planning Models, 31 May 2005; Subject Peer Review of Decision Documents.
- (2) Engineering Regulation (ER) 1110-1-12, 30 Sep 2006 Subject: Quality Management,
- (3) ER 1105-2-100, Planning Guidance Notebook, Appendix H, 20 Nov 2007, Policy Compliance Review and Approval of Decision Documents, Amendment #1
- (4) CECW-PC Memorandum, 11 April 2008, Subject: John Redmond Reallocation Report and Supplement to the Environmental Statement (Project Guidance Memorandum).
- (5) CESWT-PE-P Memorandum, 30 Ju1y 2008, Subject: Reallocation Report with Responses to HQ Comments and support for John Redmond Dam and Reservoir, Kansas.
- (6) CEWSL-PE Statement of Technical Review: Completion of Independent Technical Review, Dated 28 August 2008.
- (7) CECW-PC Memorandum, 28 October 2008, Subject: John Redmond Reallocation Report and Supplement to Final Environmental Statement (HQ Policy Compliance Review).
- (8) SWT-PE-P Memorandum 29 June 2009; Response to HQ Policy Compliance Review Document, : John Redmond Reallocation Report and Final Supplement to the Final Environmental Impact Statement
- (9) CEMP-SWD, Memorandum, 03 August 2009, Subject: John Redmond Reallocation Report and Final Supplement to the Final Environmental Impact Statement, Project Guidance Memorandum.
- (10) Engineering Circular (EC) 1165-2-209, 31 Jan 2012; Subject: Civil Works Review Policy.
- (11) Engineering Circular (EC) 1165-2-210, 15 March 2010; Subject Water Supply Storage and Risk Reduction Measures for Dam Safety.
- (12) Engineering Circular (EC) 1105-2-412, 31 Mar 2011; Subject Assuring Quality of Planning Models

b. Review Requirements and Review History. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

The draft document was previously reviewed by District Quality Control, agency review, and headquarters in 2008. The report was not finalized at that time due to issues identified during the dam safety program screening reviews. The dam safety issue involved an upstream levee that

protected a small upstream community, Hartford, Kansas, when the reservoir was in flood pool. The reallocation would mean an increase in the frequency in which the waters of the flood pool would be in contact with the levee. The dam safety screening inspections discovered possible structural issues, and the levee as a possible source of seepage. The issue caused the Hartford Levee to be rated as DSAC II, although the dam structure itself was rated DSAC IV. The levee has since been repaired and the DSAC rating has been upgraded to DSAC IV as of July 2012.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is the Planning Center of Expertise for Water Management and Reallocations Studies.

If needed, the RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies.

3. STUDY INFORMATION : Secretary of the Army

- a. Decision Document.** The decision document will be the Final Reallocation Report. The existing 1975 and 1996 water supply storage agreements will be amended to add exhibits which document the District's findings from its sedimentation surveys, the adjustments to pool levels and reallocation of storage, and an estimate of payments to be made by the State for modification of facilities, mitigation of environmental impacts, and other costs the District may incur as a result of the reallocation. The decision document will also include a Supplement to the Final Environmental Impact Statement (SFES) developed to comply with NEPA.

Study/Project Description. John Redmond Dam and Reservoir is located on the Neosho River in Coffee County, Kansas. The reservoir is the lower unit in a system of three projects in the upper Neosho River Basin in Kansas. The reallocation study and subsequent report is in response to Congressional Senate Report 106-58 to study raising the conservation pool at John Redmond Dam and Reservoir to meet the terms of two existing water supply agreements with the state of Kansas. The authorized purposes of John Redmond include: flood control, water supply, water quality control, recreation, and in addition is operated for wildlife objectives. Conservation storage is 50,501 acre-feet; of which the Kansas Water Office (KWO) has contracted for 37,450 acre-feet of storage under two agreements. The remaining conservation pool is allocated to water quality and future sediment storage. Storage available for water supply purposes in John Redmond has been steadily depleted by sediment re-deposition such that there is infringement on State of Kansas water supply agreements. As designed, the flood control pool storage would decrease with sedimentation process. However, deposition of sediment has occurred in the conservation pool, reducing water supply storage. The reallocation is essentially for that amount of conservation storage reduction.

When the development of the project was completed in 1976, the amount of sediment that would be deposited in the reservoir by the year 2014 was estimated to be 51,000 acre-feet. As the project was designed, it was assumed that sedimentation would occur mostly in the flood control pool and would

not impact conservation storage to the degree that has been experienced to date. In fact, there has been greater than expected deposition of sediment in the conservation pool, reducing the available water supply storage. There are no other surface water supply sources of any consequence in this area. The reallocation would allow the Federal government to meet the intent of its initial 1975 obligations with the Kansas Water Office for water supply agreements through 2014. The State of Kansas repaid all investment costs related to the reallocation of water quality storage in the later 1980's, and continues to promptly pay storage costs as well as annual O&M costs.

Based on the evaluation of several alternatives, the preferred alternative is to increase the top of the conservation pool elevation from 1039.0 feet National Geodetic Vertical Datum (NGVD) to 1041.0 feet NGVD to meet current water supply agreements and water quality demands.

Raising the conservation pool two feet into the flood control pool will result in an estimated 3.2 percent reduction in flood storage. An analysis of downstream flow-duration and frequency curve-duration data showed little measurable increases in flood stages at downstream locations of John Redmond Reservoir. The only measurable stage difference between elevations 1039.0 NGVD and 1041.0 NGVD occurs in the city of Burlington area. Out of bank urban flooding in the Burlington area occurs around a stage of 29 feet. The first floor elevations of improvements are at the limits of flooding for a river stage of 29 feet. Based on the above data, the potential flood control benefits lost are considered minor and insignificant.

b. Factors Affecting the Scope and Level of Review. As noted and documented in reference memorandums, all but two analyses specified in the 3 August 2009 PGM have undergone the appropriate peer review and quality control processes. The Tulsa District submitted a draft report for Headquarters review in April 2006. In response to Headquarter Policy Guidance Memorandum Comments dated 11 April 2008, the District prepared a response to that guidance and was reviewed under existing peer review guidance, in compliance with EC 1105-2-408. Little Rock District certified the completion of independent technical review 28 August 2008 as required by then current policy. Headquarters provided subsequent policy guidance on 28 October 2008 and the District responded in June 2009. All review policy requirements at that time were met; including those contained in EC 1105-2-407, Planning Models Improvement Program, which was effective May 2005. Headquarters provided a final Project Guidance Memorandum, 3 August 2009 stating that "All comment issues in the reference CEMP-SWD 28 October 2008 memorandum are resolved provided the SWT responses are incorporated into the final documents as described..." (paragraph 3). The subject memorandum also noted that the District should submit a final document reflecting the revisions addressed in the PGM, once dam safety issues are resolved. Prior to resolution of dam safety issues and completion of the final report, EC 1165-2-209 was issued requiring a risk-informed decision on the need for Independent External Peer Review of decision documents, and setting the approval authority for exclusions at Headquarters. Two comments in the PGM required additional analysis. Comment 4 of the subject memorandum related to more detailed information on the stage and discharge data related to flood control operations of the dam. Comment 5 related to having a more detailed flood damages prevented analysis to be presented. The District has conducted the additional analysis to address these two items. Corrections to Table 5, page 17 of the Reallocation Report have been made, and additional data has been added to Section 2.2, page 7 of the Report. All other reviewed products contained in the report have remained the same. The following risk factors were identified in scoping the levels for review for this final report:

- The project implementation risks will not change from what was specified in the original project purposes. Reallocation from the flood pool is essentially the same amount of anticipated change in flood control storage over the project life. The additional analysis prescribed in the PGM only provides additional information to confirm changes in flood risks are minimal, if any.
- The District Chief of Engineering agrees that there is no significant threat to human life associated with the project.
- There has been no request by the Governor of the State of Kansas for a peer review by independent experts. On the contrary, the Kansas Water Office and elected Federal and State officials have asked for an expeditious implementation of the project.
- The reallocation does not involve significant public dispute as to the size, nature, or effects of the project. The reallocation action will only impact wildlife areas; however mitigation measures have been reviewed by all parties and implemented by local agencies.
- The reallocation does not involve significant public dispute as to the economic or environmental cost or benefit of the project. Extensive public involvement in the NEPA and study process has not indicated any such public concern.
- The decision document is based on existing and routine methods. Neither analyses involve the use of innovative materials nor techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices.
- The reallocation does not require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule. It only involves operational changes to the reservoir
- The document has been conducted under previous review guidance and complied with all requirements. All comments in that review were resolved. Under a 2008 Project Guidance Memorandum, Headquarters approved the analysis in the study with a guidance to provide more economic and hydrological analysis of the impacts of the flood pool , along with being in compliance with EC 1165-2-210 (safety rating of the upstream Harford Levee).

c. In-Kind Contributions. No in-kind services or contributions were provided for this study and report.

4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

DQC was performed throughout the study in accordance with the Tulsa District’s Quality Management Plan. Each study team member’s work will be reviewed by their functional supervisor or another technical expert in their section/division. Every study team member will review team products. Email and/or MS Word’s track changes function will be used to make editorial comments on team products, while DrChecks or another system that enables the tracking of comments and responses to comments will be used for technical comments. Technical comments will follow the four-part comment structure: 1) clearly state the concern, 2) explain the basis for the concern (e.g., reference guidance), 3) explain the significance of the concern, and 4) recommend action(s) to resolve the concern. Study team meetings

will be held to review and discuss study progress and any issues encountered. The study manager will prepare an agenda and minutes for each meeting and distribute these to the study team. Relevant DQC technical comments and study team meeting minutes will be provided to the ATR team.

- a. **Documentation of DQC.** Documentation will utilize features in DrChecks to list comments responses and the status of the comments. Editorial comments will be maintained along with draft versions of the documents in the electronic project files.
- b. **Products to Undergo DQC.** DQC will be conducted on the Final Reallocation Report; with integration of the two technical components required by the final PGM will undergo DQC. Those technical components include the stage/area/frequency hydrological analysis and the economic value of any changes in flood risk management as related to reallocation. In addition the final draft submittal package for approval will undergo District quality control to ensure all PGM comments and responses have been incorporated into the final document.
- c. **Required DQC Expertise.** A hydrologist, an economist and plan formulation/study team lead will be involved in the DQC along with the technical supervision associated with those disciplines, specifically the Chief of Planning and Environmental Division and Chief of Hydrology and Hydraulic Branch.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents. The objective of the review process is to ensure consistency with established criteria, guidance, procedures, and policy. That goal has been achieved in with previous reviews of the document by Headquarters or internal independent peer review process in place at the time of the preparation of the draft document. The ATR assess whether the analyses associated with the PGM are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

- a. **Products to Undergo ATR.** The product to be reviewed under the ATR process is the technical analysis in response to the Project Guidance memorandum. The ATR team will have access to the document for reference to how those components fit into the overall document, but will be directed to focus on hydrology and economics. The PCX will scale the review as appropriate to the past completed technical reviews and the availability of ATR team members who had previously reviewed the draft report. The ATR will focus on the hydrological and economic analysis associated with that which was prescribed in the latest August 9, 2009 PGM. Also the overall final draft submittal of the report document will be reviewed to help ensure compliance with the PGM. The District contends that the document has undergone agency review, with the exception of those elements address in PGM and will seek guidance from the vertical team in that regard.
- b. **Required ATR Team Expertise.** Technical areas of expertise include environmental analysis (NEPA), dam safety, hydrology and economics as related to the operations multipurpose reservoirs and flood risk management.

- c. **PCX Involvement.** The Water Management and Reallocation Study PXC, in cooperation with the PDT, vertical team, and other appropriate centers of expertise, will determine the final make-up of the ATR team. The following table provides the types of disciplines that should be included on the ATR team when the ATR team is established.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning documentation).
Economics	The economics team member should be familiar with the economics of flood risk management, particularly associated with the operations of multipurpose reservoirs. The team member should also be familiar with water supply economics.
Hydrology	The hydrology team member(s) should be familiar with the stage/frequency area analysis related to flood risk management, particularly associated with the operations of multipurpose reservoirs. The team member should be familiar with yield analysis as related to water supply storage.
Real Estate	The Real Estate team member will be familiar with FRM studies and should have knowledge in reviewing RE Plans for feasibility studies.

- d. **Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

- (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be

elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR will be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on revised final reallocation document.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. Two types of IEPR addressed in the IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted.

- **Type I IEPR.** Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.
- **Type II IEPR.** Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of reallocation activities are completed, periodically thereafter on a

regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

- a. **Decision on IEPR.** The Tulsa District opinion is that this Reallocation Report would be eligible for exclusion to IEPR. The Tulsa Districted PCX and South Western Division endorsement for IEPR exclusion, and IEPR exclusion was approved by Headquarters in July 2012.

IEPR is not expected to be performed. Based on the criteria in EC 1165-2-209 and in the discussion above, Section 3-Factors Affecting the Scope and Level of Review are provided in the following bullets:

- Significant threat to human life: John Redmond Dam is currently rated as DSAC IV. The project implementation risks will not change from what was specified in the original project purposes. Reallocation from the flood pool is essentially the same amount of anticipated change in flood control storage over the project life. USACE dam safety screening identified the Hartford Levee (in the upper reaches of the pool) having two areas of concern that led to the levee being considered high risk. The levee height was found to have inadequate freeboard height and unacceptable seepage under the levee under Corps guidelines put forth in EC 1110-2-6064. In 2011, a contract was awarded with Federal funds and the necessary repairs have now been completed on the Hartford Levee. Tulsa District pursued reclassification of DSAC rating of the Hartford Levee, necessary in order to consider the permanent pool raise. The Dam Senior Oversight Group recommended the DSAC be revised from a DSAC II to a DSAC IV for Hartford Levee; and Mr. James Dalton agreed with this rating in July 2012.
- Where the estimated total cost of the project, including mitigation costs, is greater than \$45 million: The total project cost is estimated to be approximately \$360,000.
- Where the Governor of an affected State requests a peer review by independent experts: No such request has been made nor is a request anticipated.
- Where a request to conduct IEPR has been made by a Federal or state agency charged with reviewing the project, if he/she determines that the project is likely to have a significant adverse impact on environmental, cultural, or other resources under the jurisdiction of the agency after implementation of any planned mitigation: No such request has been made nor is a request anticipated.
- Where there is significant public dispute over the size, nature, or effects of the project or the economic or environmental costs or benefits of the project: The reallocation does not involve significant public dispute as to the size, nature, or effects of the project. The reallocation action will impact wildlife areas; affected areas will include 243 acres of wetlands and 166 acres of riparian woodlands. Mitigation measures have been reviewed by all parties and implemented by local agencies. The reallocation does not involve significant public dispute as to the economic or environmental cost or benefit of the project. Extensive public involvement in the NEPA and study process has not indicated any such public concern.
- Where the Chief has determined the Type I IEPR is warranted. No such determination has been made nor is it anticipated.
- How the decision document meets any of the possible exclusions described in Paragraph 11.d(3) and Appendix D of EC 1165-2-209: The Reallocation Report includes a Supplement to the Final Environmental Impact Statement (SFES), and it is expected that the DCW or the Chief will determine that the project:

- Is not controversial; and
- Has no more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources; and
- Has no substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures; and
- Has, before implementation of mitigation measures, no more than negligible adverse impacts on a species listed as endangered or threatened species 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.
- Per EC 1165-2-209, para.11.d.(3), The study would not otherwise significantly benefit from IEPR as the has been extensive review of the document in the district quality control, agency review and review by Headquarters. Headquarters issued a Project Guidance Memorandum stating that once the dam rating issue was resolved only minor clarifications were necessary to complete the document.

In addition, Type II IEPR is not required. This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-209), and therefore a Type II review under Section 2035 is not required. These risk factors, which are described in Paragraph 2 of Appendix E of EC 1165-2-209, are specifically addressed below:

- Is the Federal action justified by life safety or would failure of the project pose a significant threat to human life? No. John Redmond Dam is currently rated as Dam Safety Action Class 4. The project implementation risks will not change from what was specified in the original project purposes. Reallocation from the flood pool is essentially the same amount of anticipated change in flood control storage over the project life.
- Does the project involve the use of innovative materials or techniques where the engineering is based on novel methods, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices? No. The decision document is based on existing and routine methods. Neither analyses involve the use of innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices.
- Does the project design require redundancy, resiliency, and/or robustness? Does the project have unique construction sequencing or a reduced or overlapping design construction schedule? No. The reallocation does not require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule. It only involves operational changes to the reservoir.

7. POLICY AND LEGAL COMPLIANCE REVIEW

The decision document has been reviewed throughout the study process for their compliance with law and policy. There is a final Project Guidance Memorandum issued by Headquarters. The study meets the guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army

policies, particularly policies on analytical methods and the presentation of findings in decision documents.

8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX as needed.

9. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

EC 1105-2-412 does not cover engineering models used in planning. Hydrologic models are such a type of engineering model. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

a. Planning Models. The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
HEC-FDA 1.2.4 (Flood Damage Analysis)	The Hydrologic Engineering Center’s Flood Damage Reduction Analysis (HEC-FDA) program provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods.	Certified

- b. Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document: Riverware

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
Riverware	Provide stage/frequency/area analysis of changes in flood risk management operations	Allowed for Use

10. REVIEW SCHEDULES AND COSTS

- a. ATR Schedule and Cost.** The cost of the ATR will be \$10,000. The PCX will consider the completion of previous technical reviews and the previous involvement of reviewers in scaling the ATR. The ATR process will be scheduled for completion approximately two months after the draft documents are submitted for review, assuming that all comments are resolved.
- b. Type I IEPR Schedule and Cost.** There are no IEPR costs associated with this review. Should IEPR be required, the District will work with the PCX to develop the necessary schedule and cost.
- c. Model Certification/Approval Schedule and Cost.** All models are approved; consequently, there is no schedule or cost for the model certification.

11. PUBLIC PARTICIPATION

All the required NEPA and study public information requirements have been met and are documented in the report. Public workshops have been conducted related to the reallocation study. All appropriate documentation has been posted on the District website along with points of contact for questions and comments.

12. REVIEW PLAN APPROVAL AND UPDATES

The SWD Commander is responsible for approving this Review Plan. The Commander’s approval reflects vertical team input (involving district, SWD, WMRS PCX, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The Tulsa District is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last SWD Commander approval will be documented in any attachment. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the SWD Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders’ approval memorandum, should be posted on the Home District’s webpage. The latest Review Plan should also be provided to the WCRA PCX and SWD.

13. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

Point of Contact for the Tulsa District is:

Ed Rossman, Ch, Planning Branch, 918-669-4921 Edwin.J.Rossman@usace.army.mil

Point of Contact for SWD is:

Margaret .Johanning Margaret Johanning, Senior Plan Formulator, SWD, 469-487-7045

Margaret.Johanning@usace.army.mil

Point of Contact for the RMO is:

Brad Hudgens, Associate Director, WMRS PCX, 469-487-7033,

Bradley.T.Hudgens@usace.army.mil

ATTACHMENT 1: TEAM ROSTERS

DQC Roster

- Dam Safety: Wade Anderson
- H&H: both engineering and reservoir regulation: Russ Wycoff, Scott Henderson
- Office of Counsel: Keith Francis
- Operations: Eugene Goff
- Real Estate: Pam Kelly
- Planning: economics: Tyler Henry
- Engineering: Michelle Lay

ATR Roster

- ATR Lead: John Grothaus, Kansas City District
- Hydrology: Nathaniel Keen
- Economics: Cherilynn Gibbs
- TBD-Plan Formulation
- TBD-Environmental
- TBD- Real Estate

Vertical Team Roster

- Margaret Johanning, SWD
- Noel Clay, Chief, SWD Planning Division
- Yvonne Haberer, Regional Integration Team

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer’s needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE _____ Date _____
Name
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____
Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____
Name
Architect Engineer Project Manager¹
Company, location

SIGNATURE _____ Date _____
Name
Review Management Office Representative
Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE _____ Date _____
Name
Chief, Engineering Division
Office Symbol

SIGNATURE _____ Date _____
Name
Chief, Planning Division
Office Symbol

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSD	The District or MSD responsible for the preparation of the decision document	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSD	Major Subordinate Command	WRDA	Water Resources Development Act