DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
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CECW-ZB

AUG 27 2014

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

SUBJECT: Springville Dam, Great Lakes Fishery and Ecosystem Restoration Program, Draft Detailed Project Report/Environmental Assessment – Final USACE Response to Type I Independent External Peer Review

1. USACE conducted an Independent External Peer Review (IEPR) for the subject project in accordance with Section 2034 of the Water Resources Development Act of 2007, procedures described in Engineer Circular *Civil Works Review* (EC 1165-2-214) and Office of Management and Budget bulletin *Final Information Quality Bulletin for Peer Review* (2004). Independent, objective peer review is regarded as a critical element in ensuring the reliability of scientific analyses.

2. Battelle Memorial Institute Battelle established and administered the IEPR panel which consisted of two members with technical expertise in civil engineering/dam safety and hydrologic/hydraulic engineering. The final IEPR report details the process, describes the IEPR panel members and their selection, and summarizes the final panel comments on the existing environmental and engineering analyses contained in the Springville Dam project documents.

3. The final USACE response to the review panel comments is attached. I approve the final written responses to the IEPR contained in the enclosed document. The IEPR Report and USACE responses have been coordinated with the vertical team and will be posted on the Internet, as required in EC 1165-2-214.

4. If you have questions on this matter, please contact me, or have a member of your staff contact Ms. Yvonne Prettyman-Beck, Deputy Chief, Great Lakes and Ohio River Division Regional Integration Team, at (202) 761-5237.

STEVEN L. STOCKTON, P.E.
Director of Civil Works

Springville Dam, Great Lakes Fishery and Ecosystem Restoration Program, New York
Detailed Project Report/Environmental Assessment

U.S. Army Corps of Engineers Response to Independent External Peer Review
August 2014

Independent External Peer Review (IEPR) was conducted for the subject study in accordance with Section 2034 of WRDA 2007, EC 1165-2-214 and the Office of Management and Budget's *Final Information Quality Bulletin for Peer Review* (2004).

The goal of the U.S. Army Corps of Engineers (USACE) Civil Works program is to always provide scientifically sound, sustainable water resources solutions for the nation. The USACE review processes are essential to ensuring project safety and quality of the products USACE provides to the American people. Battelle Memorial Institute (Battelle), a non-profit science and technology organization with experience in establishing and administering peer review panels for the USACE, was engaged to conduct the IEPR for the Springville Dam Fish Passage Project, Section 506 Great Lakes Fishery and Ecosystem Restoration, Detailed Project Report and Environmental Assessment.

The Battelle appointed IEPR panel reviewed the subject report and supporting documentation. The IEPR panel comments are documented in the report Final Independent External Peer Review report, Cattaraugus Creek Watershed Ecosystem Restoration at Springville Dam, Draft Detailed Project Report/Environmental Assessment, 18 April 2014. The review resulted in nine Final Panel Comments – one comment was rated as having medium/high significance, one comment was rated as having medium significance, six comments were rated as having medium/low significance and one comment was rated as having low significance. USACE concurred with all nine comments. The following discussion presents the final responses to the nine comments.

The Springville Dam study is an ecosystem restoration study that is evaluating the opportunities for restoring fish passage and aquatic connectivity of Cattaraugus Creek at the Springville Dam, Springville, NY.

1. Comment – *Medium/High Significance*: The potential hazards and safety issues created by a submerged hydraulic jump occurring immediately downstream of the proposed lamprey barrier may have not been evaluated.

This comment included three recommendations for resolution. The first was not adopted, the second and third were adopted as discussed below.

USACE Response: Not Adopted

The IEPR Panel recommended adding a discussion of the potential for a submerged hydraulic jump and the resultant risk to the public to the Detailed Project Report/Environmental Assessment (DPR/EA), if appropriate reviews or analysis were available. As relevant information was not available at the time of the DPR/EA this recommendation was not adopted.

USACE Response: Adopted

Action to be taken: The IEPR panel recommended that USACE review the potential of a submerged hydraulic jump occurring, and whether the lamprey barrier can be designed to prevent both a submerged jump from occurring as an early stage of the Preconstruction, Engineering, and Design (PED) phase. USACE will perform this analysis as part of the PED phase.

USACE Response: Adopted

Action taken: The IEPR panel recommended that a short statement regarding the need for consideration and analysis of a submerged hydraulic jump in the PED phase to be added to the DPR/EA. USACE revised section 4.1 of the DPR/EA clarifying that future analyses will be undertaken in the PED phase to assess the potential for the occurrence of a submerged hydraulic jump, and the risks posed to public safety.

2. Comment – *Medium Significance*: Construction considerations that may impact the implementation of the preferred alternative are not discussed.

This comment included two recommendations; both were adopted.

USACE Response: Adopted

Action taken: The IEPR panel recommended USACE to discuss the anticipated construction sequencing, methods, and significant construction-related considerations in the DPR/EA. Section 4.1 of the DPR/EA was amended to include a reference to the construction methods, procedure and sequencing located in the appendix. This section was also amended with a discussion of considerations for the PED phase.

USACE Response: Adopted

Action to be taken: The IEPR panel recommended that USACE evaluate using the bottom portion of the existing spillway as the lamprey barrier so as to minimize the water control and dewatering required during construction. USACE will adopt this recommendation in the PED phase.

3. Comment – Medium/Low Significance: The potential impacts, including expected risk reduction and residual risk, of removing the middle section of the existing dam spillway and replacing it with a lamprey barrier, have not been adequately presented or quantified.

This comment included two recommendations; both were adopted.

USACE Response: Adopted

Action taken: The IEPR panel recommended that USACE clarify the differences in dam safety risk between the with-project and without-project conditions in the DPR. A statement about the anticipated residual risk resulting from implementation of the project was added to Section 4.1 of the DPR.

USACE Response: Adopted

Action to be taken: The IEPR panel recommended quantifying risk reduction and residual risk as part of the PED. USACE will adopt this recommendation by designing the lamprey barrier in accordance with all required Federal and State dam safety requirements. USACE will further quantify risk reduction and residual risk in the PED phase.

4. Comment – *Medium/Low Significance*: The Hydrology and Hydraulics (H&H) analyses to determine impoundment levels for the post-construction condition are not presented.

This comment included two recommendations; both were adopted.

USACE Response: Adopted

Action to be taken: The IEPR panel recommended performing H&H analyses (potentially including dam-break and inundation mapping) as part of the PED to evaluate flood risk, including the findings with the PED documentation. They also recommended documenting any concerns regarding future H&H analysis in the DPR/EA. USACE will adopt this recommendation by performing H&H analyses as part of the PED. USACE also added a discussion of proposed H&H analysis and other H&H considerations to section 4.1

USACE Response: Adopted

Action to be taken: The IEPR panel recommended incorporating the results of the H&H analysis in the final design stability and seepage analysis in accordance with the New York State Department of Environmental Conservation (NYSDEC) and USACE dam safety requirements during the PED phase. They also recommended adding a statement to the DPR/EA that these analyses will be completed as part of the PED phase. USACE will adopt this recommendation during the PED phase. In addition, a sub-section was added to 4.1 of the DPR/EA to discuss considerations for the PED phase.

5. Comment – *Medium/Low Significance*: The potential impact of sediment deposition downstream of the dam following dam removal and lamprey barrier construction has not been documented.

This comment included three recommendations; one was adopted.

USACE Response: Not Adopted

Action taken: The IEPR panel recommended (1) describing downstream bed elevations following dam removal and (2) documenting any causes of concern for structures resulting from sediment deposition in the DPR/EA, if such a review was completed as part of the feasibility study activities. A review of downstream bed elevations following dam removal has not been completed during the feasibility study; therefore, these two recommendations could not be adopted.

USACE Response: Adopted

Action taken: The IEPR panel recommended that, if the feasibility study did not include a review of the potential impacts of sediment deposition, the DPR/EA should instead state that the impacts of downstream sediment deposition resulting from the preferred plan will be assessed in the PED phase. This recommendation was adopted by adding a statement to section 4.1 stating that this assessment will take place in the PED phase.

6. Comment – *Medium/Low Significance*: The potential effects of climate change and how they might affect the final design are not specifically addressed.

This comment included two recommendations; both were adopted.

USACE Response: Adopted

Action to be taken: The IEPR panel recommended accounting for increased storm frequency and rainfall intensity in the H&H analysis. USACE will adopt this recommendation in the PED phase by considering the potential effects of climate change during H&H analysis.

USACE Response: Adopted

Action taken: The IEPR panel recommended adding a statement to the DPR/EA describing the potential effects of climate change that will be considered in the final design. This recommendation was adopted by adding a statement to section 2.2 regarding the potential effects of climate change. Additionally, a statement was added to section 4.1 indicating that the impacts of climate change would be considered during the PED phase.

7. Comment – *Medium/Low Significance*: Documentation of future design issues to consider during PED is not included in the DPR/EA.

This comment included two recommendations; both were adopted.

USACE Response: Adopted

Action taken: The IEPR panel recommended documenting design issues that should be considered as part of the PED phase. These include exposure of upstream hazards, subsurface investigations, stability analysis using subsurface data, and seepage issues. This recommendation was adopted by adding these and other design considerations in section 4.1 of the DPR/EA.

USACE Response: Adopted

Action to be taken: The IEPR panel recommended providing the documented design considerations to the design team during the PED phase. This recommendation was adopted by adding these and other design considerations in section 4.1 of the DPR/EA.

8. Comment – *Medium/Low Significance*: The potential for the occurrence of head cutting during the transition period from the time of dam removal until the time when the sediment regime returns to its natural condition has not been discussed.

This comment included one recommendation that was adopted.

USACE Response: Adopted

Action to be taken: The IEPR panel recommended analyzing the potential for, and risks associated with headcutting in the PED phase. This recommendation will be adopted by assessing the potential for headcutting during the PED phase. Additionally, a statement has been added to the DPR regarding the need for this analysis in the PED phase.

9. Comment – *Low Significance*: The assumption that all alternatives, not just the preferred alternative (Alternative 2B), may see increases from their original scoping costs has not been clearly supported.

This comment included one recommendation that was adopted.

Action taken: The IEPR panel recommended adding a statement to the DPR to explain and document the assumption that all alternatives may see similar cost increases as does the preferred plan, and that these increases would not change the selection of the preferred plan. This recommendation was adopted by adding a discussion to section 4.1 of the DPR/EA supporting the assumption related to cost increases of the preferred plan.