

# Addendum to the Final Independent External Peer Review Report for the Lower Yellowstone Intake Diversion Dam Fish Passage Project, Montana Draft Environmental Impact Statement

Prepared by  
Battelle Memorial Institute

Prepared for  
Department of the Army  
U.S. Army Corps of Engineers  
National Ecosystem Restoration Planning Center of Expertise  
Mississippi Valley Division

Contract No. W912HQ-15-D-0001  
Task Order: 0009

August 12, 2016

This page is intentionally left blank.

CONTRACT NO. W912HQ-15-D-0001  
Task Order: 0009

# Addendum to the Final Independent External Peer Review Report for the Lower Yellowstone Intake Diversion Dam Fish Passage Project, Montana Draft Environmental Impact Statement

Prepared by

Battelle  
505 King Avenue  
Columbus, Ohio 43201

for

Department of the Army  
U.S. Army Corps of Engineers  
National Ecosystem Restoration Planning Center of Expertise  
Mississippi Valley Division

August 12, 2016

This page is intentionally left blank.

# Table of Contents

	Page
1. INTRODUCTION.....	1
2. METHODS .....	1
3. FINAL PANEL COMMENTS .....	3

## LIST OF ACRONYMS

<b>DEIS</b>	Draft Environmental Impact Statement
<b>DrChecks</b>	Design Review and Checking System
<b>EC</b>	Engineer Circular
<b>IEPR</b>	Independent External Peer Review
<b>NEPA</b>	National Environmental Policy Act
<b>USACE</b>	United States Army Corps of Engineers

## 1. INTRODUCTION

This addendum is a supplement to the Final Independent External Peer Review (IEPR) Report for the Lower Yellowstone Intake Diversion Dam Fish Passage Project, Montana Draft Environmental Impact Statement<sup>1</sup> (DEIS: hereinafter: Lower Yellowstone River Intake DEIS IEPR) submitted on August 5, 2016, by Battelle. It was prepared to document activities associated with the IEPR Panel's review of the public comments on the Lower Yellowstone River Intake DEIS.

This addendum contains two additional Final Panel Comments (presented in Section 3) and briefly details the IEPR process that determined the need for, and led to the generation of, these comments. The Final Panel Comments in this addendum are numbered Final Panel Comments 9 and 10, continuing the Final Panel Comment numbering presented in the Lower Yellowstone River Intake DEIS Final IEPR Report, which stopped at Final Panel Comment 8.

## 2. METHODS

This section summarizes the activities associated with the review of the public and agency comments conducted for this project.

The U.S. Army Corps of Engineers (USACE) received 13,000 comment letters from various state and Federal agencies, non-governmental organizations, and members of the general public. Based on information provided by USACE, of the comment letters received, approximately 10 comment letters provided detailed scientific and technical comments; the remaining comments were general form letters expressing support or opposition.

Battelle requested that USACE provide two categories of comment letters: all of the letters that had scientific and technical comments, plus representative examples of the remaining form letters that encapsulated a general overview of the public's concerns. In accordance with procedures described in the Department of the Army, USACE, Engineer Circular (EC) *Civil Works Review* (EC 1165-2-214)<sup>2</sup>, Appendix D, Battelle focused the IEPR Panel's public comment review on assessing scientific and technical issues with regard to the assumptions, data, methods, and models used in the project. Battelle received electronic versions of the requested public comments from USACE on August 2, 2016. Battelle reviewed the comments and then provided them in their original full-text format to the panel members.

Each panel member was asked to independently determine whether the public comments contained any additional scientific or technical concerns regarding the project which were not previously identified and which should be addressed by USACE in the Lower Yellowstone River Intake project documents. The

---

<sup>1</sup> The official title of the Task Order 0009 award that Battelle received (dated 2016 May 26) from USACE was titled the "Independent External Peer Review Report Lower Yellowstone River Project, Montana Intake Dam Modification Supplemental (Amended) Analysis to the 26 April 2010 Environmental Assessment and Appendices." For clarity and to reflect the actual review documents that underwent peer review, Battelle has used the name of the actual document supplied for review "Lower Yellowstone Intake Diversion Dam Fish Passage Project, Montana Draft Environmental Impact Statement" throughout this deliverable.

<sup>2</sup> USACE (2012). *Water Resources Policies and Authorities: Civil Works Review*. Engineer Circular (EC) 1165-2-214. Department of the Army, U.S. Army Corps of Engineers, Washington, D.C. December 15.



Panel was charged with focusing on scientific and technical issues and not policy-related comments, per EC 1165-2-214, Appendix D.

Comments submitted by state and Federal agencies were provided to the Panel “For Information Only.” Battelle understands that under the National Environmental Policy Act (NEPA), USACE must address state and Federal agency comments as part of the consultation process; therefore, issues brought up by these agencies, and USACE’s subsequent responses, were considered policy related. However, if issues noted in the public letters were also discussed in the agency letters, the Panel noted the agency letters as well.

The Lower Yellowstone River Intake DEIS IEPR panel members received the public and agency comments from Battelle on August 3, 2016. The five Lower Yellowstone River Intake DEIS IEPR panel members reviewed two comment letters from state and Federal agencies as well as 166 emails, letters, and comment cards from a variety of companies, non-profit organizations, and members of the general public. The Lower Yellowstone River Intake DEIS IEPR panel members were required to answer one charge question with regard to the public comments.

**1. Does information or do concerns raised in the public comments raise any additional discipline-specific technical concerns with regard to the overall report?**

The panel members submitted responses to this charge question, and Battelle reviewed those responses to identify any issues, areas of potential conflict, and other overall impressions. Each panel member’s individual comments were shared with the full Panel. Battelle then facilitated a teleconference with the panel members to determine if any of their identified issues should be carried forward as Final Panel Comments.

Based on the Panel’s review, most of the public comments fell into the category of general support or opposition or were discussed in previous Final Panel Comments submitted in the Lower Yellowstone River Intake DEIS Final IEPR Report. However, by the end of the discussion, the panel members identified two issues within the public comments that needed additional clarifying information in order to strengthen the Lower Yellowstone River Intake DEIS. Each issue was addressed as its own Final Panel Comment to make it easier for USACE to evaluate and respond.

Some concerns noted by the public paralleled the Panel’s concerns identified during the IEPR of the Lower Yellowstone River Intake DEIS review documents and documented in previous Final Panel Comments. The Panel did not repeat those concerns in Final Panel Comments 9 or 10. All other concerns raised by agencies and other stakeholders were deemed by Battelle and the Panel to be related to policy and therefore outside the purview of the Panel’s review.

All panel members reviewed and provided input on the issues discussed in Final Panel Comments 9 and 10 (presented in Section 3 of this addendum). Battelle prepared this addendum and conducted a final review and edit of Final Panel Comments 9 and 10 for clarity and consistency. There was no direct communication between the Panel and USACE during the review and preparation of the Final Panel Comments.

It is anticipated that Battelle will enter Final Panel Comments 9 and 10 into USACE’s Design Review and Checking System (DrChecks), a Web-based software system for documenting and sharing comments on reports and design documents, so that USACE can review and respond to them. USACE will provide an Evaluator Response to Final Panel Comments 9 and 10, and the Panel will respond via BackCheck



Response to the Evaluator Responses. The USACE and Panel responses will be documented in DrChecks. Battelle will provide USACE and the Panel a pdf printout of all DrChecks entries, through comment closeout, as a final deliverable and record of the results of the IEPR and the public and agency comment review.

### **3. FINAL PANEL COMMENTS**

This section presents the full text of Final Panel Comments 9 and 10 prepared by the Lower Yellowstone River Intake DEIS IEPR panel members.

## Final Panel Comment 9

**Impacts of downstream passage on mortality of drifting fish larvae associated with proposed structures and water intakes under each alternative, including the preferred alternative, are not addressed in the DEIS.**

### Basis for Comment

The Montana Chapter of the American Fisheries Society (5.MTAFS\_Intake\_Draft.pdf), and Defenders of Wildlife and Natural Resources Defense Council (6. Defenders and NRDC.pdf, Section C, pages 18-19) state in their public comment submissions that both larval fish drift post spawning and larval fish mortality are important factors in the survival of pallid sturgeon.

Many riverine fishes, including pallid sturgeon, migrate upstream in the spring to spawn, with subsequent drift of fertilized eggs and/or larvae downstream. Flowing water is needed for larval fish to remain suspended in the water column as they grow to the point where they can swim and maintain themselves in the water column. In the case of pallid sturgeon, fisheries scientists who have studied the species in the Yellowstone River have concluded that there is currently not a sufficient length of river distance between the Intake Diversion Dam and Lake Sakakawea for drifting larvae to remain suspended and survive. With the ability of adult pallid sturgeon to migrate upstream beyond the Intake Diversion Dam, it is likely that there will be a sufficient length of river for their larvae to drift in current, survive, and contribute to natural recruitment.

Larval fishes are very fragile and have little or no swimming ability. Consequently, mortality can occur through battering when these fishes drift downstream over dams or pass through turbulent cascades. Further, mortality can occur when larval fishes are removed from a river by entrainment associated with water diversion structures or pumps.

Currently, all of the alternatives considered will, to some degree, contribute to the mortality of larval fishes in the Yellowstone River as the fishes drift downstream over the Intake Diversion Dam or are removed from the river by water diversion structures or pumps. The relative contributions to mortality of larval fishes, especially pallid sturgeon, under each alternative are not provided in the DEIS.

### Significance – Medium/High

By not including information on the extent of fish larvae mortality, particularly for the pallid sturgeon, estimates of the benefits to fish populations under the preferred project alternative and other alternatives associated with enhanced upstream fish passage may not be accurate.

### Recommendation for Resolution

1. Provide information on the extent of drifting larval fish mortality associated with structures and pumps under the preferred alternative and other alternatives.
2. Document whether the preferred alternative will result in higher or lower levels of larval fish mortality than the other alternatives.

## Final Panel Comment 10

**The design criteria used to identify the non-dam alternatives do not explain how the multiple pump alternatives were developed.**

### Basis for Comment

The design criteria used to identify the non-dam alternatives are very general, and it is unclear how the multiple pump alternatives were developed. This uncertainty about the design criteria is reflected in the following DEIS statement:

The two pumping alternatives have been structured in a way that discrete elements from either alternative could be combined or added to one another to achieve a more optimal alternative if new information indicates such combinations would improve alternative performance, reduce impacts, and/or reduce costs (DEIS p. 2-64).

Several public comments raised issues regarding the design of the non-dam alternatives, including the reliability of the pumping/power supply alternatives (4. USCOE Comment Letter, 12. LYREC Bypass Letter); the number of pumps necessary to meet irrigation demand (6. and 7. Defenders of Wildlife and the Natural Resource Defense Council, 10. American Rivers); the cost-effectiveness of irrigation conservation measures (6. and 7. Defenders of Wildlife and the Natural Resource Defense Council, 10. American Rivers); and the potential financial impacts of changes in Lower Yellowstone Project operation and maintenance costs on member farms (4. USCOE Comment Letter, 6. and 7. Defenders of Wildlife and the Natural Resource Defense Council).

These design issues influence the costs of the non-dam alternatives and the overall selection of the preferred alternative.

### Significance – Medium/Low

Providing additional information on how the configurations of the non-dam alternatives were selected would contribute to a greater understanding of the alternatives assessment process.

### Recommendation for Resolution

1. Document the design criteria used for the non-dam alternatives and clarify whether these criteria could be achieved with alternative pumping/power supply configurations.
2. Provide information on the reliability and the initial and recurring costs of different pumping power supply configurations, including the impacts of variable water supplies and conservation measures on crop yields/revenues.

