

# **Finding of No Significant Impact**

## **East Branch Dam Safety Modification**

### **East Branch Clarion River Elk County, Pennsylvania**

In January 2008, the U.S. Army Corps of Engineers, Pittsburgh District (Corps) determined through a series of studies that East Branch Dam had structural deficiencies that could cause it to fail. Consequently, in February 2008, the Corps lowered the summer and winter operating pools of East Branch Clarion River Lake by 20 and 30 feet, respectively, as an interim measure to reduce the potential risk of dam failure.

From that time, the District has also implemented a number of secondary interim risk reduction measures (IRRM). These measures include: an extensive communication plan to keep stakeholders and the public informed of activity at East Branch Dam; the enhancement of existing instrumentation and more frequent collection of critical instrument readings to better monitor the condition of the dam; cross-training of regional staff to support staff at the dam; the initiation of 24-hour staffing to monitor the condition of the dam; an updated Emergency Action Plan to re-evaluate emergency procedures; the development of new inundation mapping to better define the floodway downstream of East Branch Dam; more drills and exercises to better educate staff and local emergency management personnel; the pre-positioning of resources at the dam for emergency response; and the improvement of project lighting systems. These interim measures (i.e., the lowering of pools and secondary measures described above) were addressed *ex post facto* in National Environmental Policy Act (NEPA) documentation, coordinated extensively with the public, and concluded with a “Finding of No Significant Impact” (FONSI) on 15 June 2009.

Since February 2008, the District has formulated and evaluated a number of permanent repair alternatives (nine alternative plans—three non-structural and six structural—were screened down to the five plans presented below, based on: completeness, effectiveness, efficiency, acceptability, implementation cost, and economic and environmental impacts). These repair measures and their potential socio-economic and environmental impacts are described in detail in a second Environmental Assessment (EA; titled, “East Branch Dam Safety Modification, East Branch Clarion River, Elk County, Pennsylvania”) with the purpose of implementing a repair alternative. The need for this action is to reduce the risk of dam failure and, in turn, to reduce the potential risk of life loss, and economic and environmental impacts downstream. The array of repair alternatives considered includes a “No Action” alternative, whereby the lower interim pools would be adopted for an indefinite period (essentially, permanently), along with all current IRRMs (listed above). This alternative and the repair alternatives are listed below with brief descriptions:

Alternative <i>Plan NS1</i> ("No Action" alternative).	Non-structural: would essentially make permanent the current lower interim pool levels (El.1650 summer, El.1623 winter), along with all current interim risk reduction measures.
Alternative <i>Plan S3</i> –PREFERRED PLAN–	Structural repair: an impervious full-depth cut-off wall drilled into bedrock, the full length of the dam at about center-line, with foundation grouting and secant shafts.
Alternative <i>Plan S4</i>	Structural repair: an embankment extension immediately downstream of existing dam, using the top portion of the dam for fill, and additional fill from a nearby hillside; coupled with a full-depth cut-off wall at the toe of the existing dam.
Alternative <i>Plan S5</i>	Structural repair: a concrete gravity structure, positioned near downstream toe of existing dam. Structure would include a drainage gallery and foundation grout curtain for seepage control.
Alternative <i>Plan S6</i>	Structural: removal of East Branch Dam, ensuring run-of-river conditions at all times. A significant portion of the embankment would be removed and stable slopes created on what remained of the embankment. Disturbed areas would be re-vegetated.

*Plan NS1* would make permanent (i.e., follow for an indefinite period of time) all IRRMs at East Branch Dam, including the lower pool elevations; however, the estimated annual loss of economic and recreational benefits would be \$1-8 million. Moreover, the dam's flood control capabilities would be reduced, and current IRRMs were not developed to be maintained safely indefinitely. *Plan S6* would remove East Branch Dam; however, this would result in the total loss of flood control (resulting in severe periodic flood risk) and operational capacity for low-flow augmentation (resulting in severe water quality and quantity issues downstream). Additionally, both the cold water lake fishery and downstream cold water fishery would be lost; and with the loss of the reservoir, increased levels of acid mine drainage and periodic heavy sediment washout from the exposed reservoir bottom would impact remaining aquatic life downstream—including two Pennsylvania state-listed species. *Plans S3, S4, and S5* are similar in the benefits they would provide; however, *Plans S4 and S5* would both require new construction that would extend about 600 feet past the current dam's toe, destroying that downstream section of the river. Additionally, both plans would cost considerably more than *Plan S3* and take considerably longer to build than *Plan S3*. Thus, *Plan S3* is the preferred plan.

[Applicable to all alternatives:] Historic abandoned oil wells are known to be located upstream, downstream, and under the East Branch Dam. Hazardous, Toxic, and Radioactive Waste (HTRW) Phase I preliminary site assessments have been conducted and Phase II site investigations will be conducted; after which HTRW concerns (i.e., location and mitigation of impacts, associated costs, and environmental constraints that would render an alternative infeasible) can be fully addressed.

After having carefully evaluated and balanced all beneficial and detrimental aspects of the alternative repair actions, including all regulatory agency input, it has been determined that the recommended plan to install a full-depth cutoff wall, constructed with secant piles, along the entire length of East Branch Dam, along with foundation grouting

(i.e., Alternative *Plan S3*), does not constitute a major Federal action significantly affecting the quality of the human environment. In accordance with 40 C.F.R. § 1508.13 (1), it has been determined that these actions will not cause any significant, long-term adverse effects to the aquatic habitat and wetlands within East Branch Clarion River Lake, the East Branch Clarion River, or the Clarion River; or cause impacts to groundwater resources, riparian habitat, wild and scenic rivers, geology, soils, socio-economic conditions, recreation, aesthetics, air quality, or ambient noise levels.

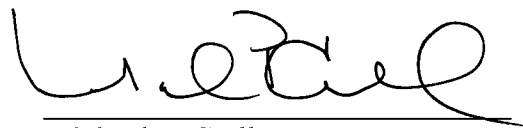
It is the District's opinion that East Branch Dam may be eligible for inclusion in the National Register of Historic Places; however, the proposed internal repairs to the dam described in the EA are of such a nature that they should not adversely affect any of the seven aspects of integrity important to Section 106 compliance. The District's preliminary determination is that for the dam repair alternatives, full compliance with Section 106 will be achieved without an issue of significant impacts to a historic property that would require further NEPA consideration.

Consequently, for the proposed dam repairs, the preparation of an environmental impact statement under NEPA is not warranted. Public interest will best be served by repairing the dam to make it safe for the foreseeable future. The proposed work is in compliance with all applicable Federal, State, and local laws and regulations. There are no unresolved issues regarding environmental compliance and coordination, and there are no unresolved environmental issues associated with the repairs needed for East Branch Dam.

The District's final determination has been made after consideration of all public input from the NEPA public review process. Letters have been mailed to over 200 recipients, directing them to the Corps' public website, and inviting their review and comment regarding the second "East Branch Dam Safety Modification EA and draft FONSI" that addresses the Corps' repair alternatives, including the preferred plan (Alternative *Plan S3*), which would permanently reduce the risk of dam failure at East Branch Dam. Execution of the FONSI will precede an agency final decision on this proposed action.

Date

1 July 10



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