

East Branch Dam Safety Initiative



STATUS REPORT September 2013



**US Army Corps
of Engineers** ®
Pittsburgh District

UPDATED

SUMMARY

The primary objective of our Dam Safety Program is to maintain public safety by ensuring the dams we own and operate are safe and risks to the public are minimized. East Branch Dam has confirmed dam safety issues related to potential internal erosion similar to the serious internal erosion episode in 1957 that required lowering the lake to make repairs. Based on the results of a risk informed screening of the dam, in February 2008, the Corps began 24-hr staffing at the dam, lowered the lake level and implemented an interim reservoir operations plan as reasonable and prudent measures. This allowed the District to provide immediate and substantial interim risk reduction while limiting negative impacts on project purposes.

A Dam Safety Modification Study was completed and approved by Headquarters, U.S. Army Corps of Engineers in October 2010. The approved long term risk reduction plan for East Branch Dam consists of constructing a concrete cutoff wall within the existing embankment and foundation.

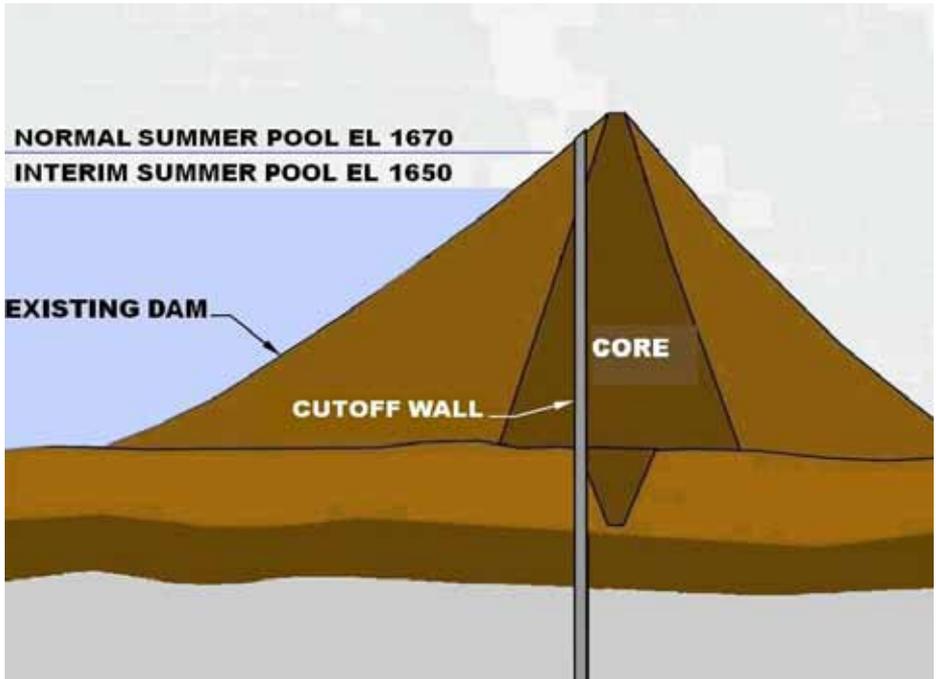
The preconstruction, engineering and design phase of the project was initiated in October 2010. Approval to initiate construction was granted in August 2011. Two construction contracts have been awarded in advance of the cutoff wall contract. A contract to improve the government access road and to prepare work areas for the cutoff wall contract was physically complete in December 2012. A contract to construct a building for government construction staff was completed in July. The cutoff wall contract was advertised in May. Contract award and notice to proceed is expected in Winter 2014. The cutoff wall contract is expected to be physically complete in 2018.

Returning the lake back to pre-2008 levels is dependent on successful completion of the cutoff wall and completion of a post construction risk assessment.

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DAM SAFETY MODIFICATION PROJECT

The Dam Safety Modification Study, approved in October 2010, defines the scope, cost and schedule of the proposed long-term risk reduction plan. The study recommends constructing a full-length, full-depth concrete cutoff wall through the dam to reduce risk and restore the dam to normal operation. The estimated cost of this plan was \$280 million.



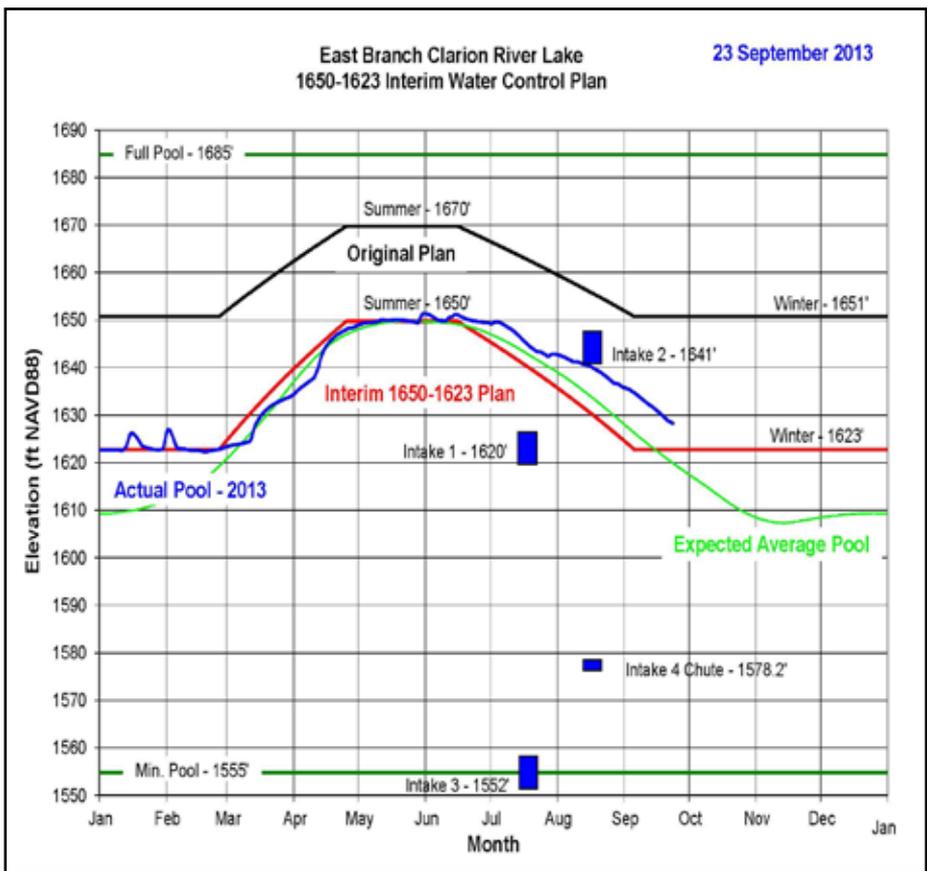
The preconstruction engineering and design phase of the project was initiated in October 2010. The Assistant Secretary of the Army for Civil Works concurred with initiation of construction on Aug. 5, 2011. The site development contract for replacing the access road and preparing the office and material laydown areas was completed in December 2012. The construction office building contract was awarded in September 2012 and completed in July. Additional instrumentation to monitor the condition of the dam was installed in 2012. Data loggers, which manually read the instrumentation, were also installed. A contract to automate instrumentation readings was awarded in September. Cutoff wall design was approved in March and the contract advertisement is occurred in May. Physical completion of the cutoff wall contract is expected in 2018.

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RESERVOIR OPERATION

The district is currently operating East Branch Dam and Reservoir under a lowered pool to reduce risk as part of the Dam Safety Initiative. The lake is currently below full summer pool and will continue rise at an average rate expected for this time of year. The success of meeting lake levels is dependent on the amount of precipitation within the Clarion River Basin. The dam is continuing to provide additional water to maintain downstream water quality and temperature. As of September 23, East Branch Lake is near 1628 feet. To obtain the latest lake level and outflow information, please visit: www.lrp.usace.army.mil/Missions/WaterManagement/ReservoirForecast.aspx

An annual review of how the Corps will operate the reservoir pool was conducted in March 2013. The district recommended to maintain its current interim water control plan.



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INTERIM RISK REDUCTION MEASURES

The lake has been staffed 24 hours a day, seven days a week since March 2008.

- Maintenance of the existing sluice gates and machinery was completed in 2008 to improve reliability.
- Control Tower Number 4 intake extension was installed in 2008.
- On-site equipment and supplies were delivered in 2008.
- Monthly inspections of the downstream face of the embankment have been performed since May 2012.
- Annual measurements to look for deformations were performed in November 2012.
- Installed additional piezometers in advance of construction which we are reading as part of the Interim Risk Reduction Measures.
- The 2013 annual dam safety refresher training was completed in February.

NEPA AND WATER QUALITY

The Corps:

- Completed an Environmental Assessment and signed a Finding of No Significant Impact (FONSI) document, in compliance with the National Environmental Policy Act (NEPA), to assess environmental, cultural, and economic impacts related to implementation of the East Branch Dam interim water control plan and the Dam Safety Study's risk reduction alternatives.

- Completed an environmental assessment and signed a FONSI addressing the Dam Safety Study's risk reduction alternatives and proposed long-term risk reduction plan.

- Continues to monitor real-time water temperature at the dam outflow from March through November. (Water temperature information available on the Dam Outflow Information link at www.lrp.usace.army.mil/Missions/Recreation/Lakes/EastBranchClarionRiverLake.aspx)

- Continues to monitor real-time lake water temperature profile at a location near the dam intake tower.

- Conducts water quality analyses at the dam outflow twice monthly.

- Conducts East Branch Clarion River Lake aquatic ecology survey from May through October.



One of East Branch Dam's authorized purposes is to provide additional water flows to maintain downstream water quality to offset industrial and sanitary discharges. The Corps does this by opening the control tower's water intakes at different levels and temperature elevations. This water mixes in the outflow to achieve the required volume and temperature. To ensure this requirement was met during lower water levels, the Corps fabricated an extension that allows intake water from an additional lower elevation where cool water is available.

UPDATED

TO DO LIST

2008

- Received Willowstick Seepage Flow Path Mapping Final Report
- Control Tower Maintenance Work
- Number 4 Intake Extension Installation

2009

- Preliminary Risk Reduction Measures Identified
- Installation of Lighting and Storage Bins
- Finding of No Significant Impact signed for Interim Water Control Plans Environmental Assessment
- Completed Extension of the Federal Boat Launch Ramp
- Conducted Table-Top Dam Safety Exercise with Emergency Responders

2010

- Inundation Mapping Complete
- Finding of No Significant Impact for the Long-Term Risk Reduction Measure signed
- Independent External Peer Review of Dam Safety Modification Study
- Dam Safety Modification Study Approved
- Initiate Project Design Phase

2011

- Complete site development contract plans for access road improvements and site preparation
- Receive Assistant Secretary of the Army for Civil Works concurrence for construction
- Award geotechnical investigations contract for cutoff wall design
- Award site development construction contract

2012

- Award contract for Independent External Peer Review of design phase
- Geotechnical investigations for cutoff wall design complete
- Award office building contract
- Award contract to install instrumentation to monitor the embankment during construction
- Conducted Table-Top Dam Safety Exercise with Emergency Responders

2013

- Award contract to automate instrumentation
- Advertise cutoff wall contract
- Award contract for additional guide rail along access road

2014

- Award cutoff wall contract

