

# **East Branch Dam Safety Initiative**



## **STATUS REPORT April 2011**



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

## 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 risk to the public is minimized. East Branch Dam is considered to have confirmed and unconfirmed, potentially unsafe issues which merit further analysis and evaluation.

In February 2008, the Corps lowered the lake level and implemented an interim operations plan as a reasonable and prudent measure. This allowed the Corps to provide immediate and substantial interim risk reduction while limiting negative impacts on project purposes, such as flood damage reduction.

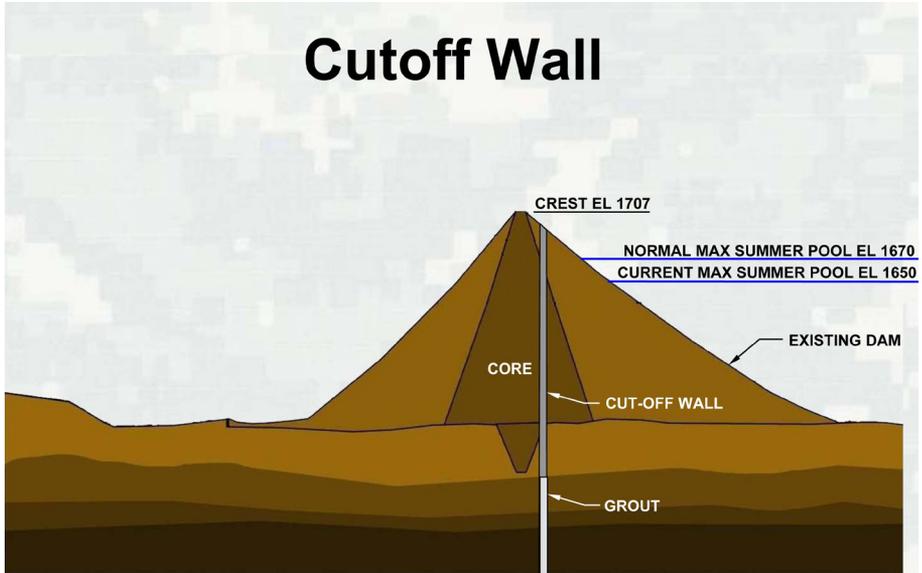
During the Summer of 2008, Draper, a Utah-based Willowstick Technologies Inc., conducted a geophysical survey to indicate possible seepage paths through and under the dam. The survey was conducted at the right abutment portion of the dam, which is an area of great concern. Results indicate that seepage is generally consistent with known conditions and supports the need to pursue long-term repairs. In addition, seepage mapping suggests the presence of several possible seepage paths not previously recognized.

These locations are not believed to pose an imminent risk to dam stability and were subsequently checked by drilling and sampling. The data gathered was used to develop long-term risk reduction measures and long-term repair alternatives. The Dam Safety Modification Study includes our evaluation of the long-term repair alternatives to optimize risk reduction and cost, and propose a plan for approval. The study defines the scope, cost and schedule of the proposed long-term risk reduction plan.

**UPDATED**

## DAM SAFETY MODIFICATION PROJECT

A Dam Safety Modification Study was completed to evaluate ways to reduce risks and recommends a risk reduction plan for approval by Headquarters, U.S. Army Corps of Engineers. The study 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 is \$280 million. The study was reviewed by a Corps technical team and by an Independent External Peer Review team, which was comprised of three technical subject matter experts. The Study was approved by Headquarters in October 2010 subject to refining the risk reduction plan.

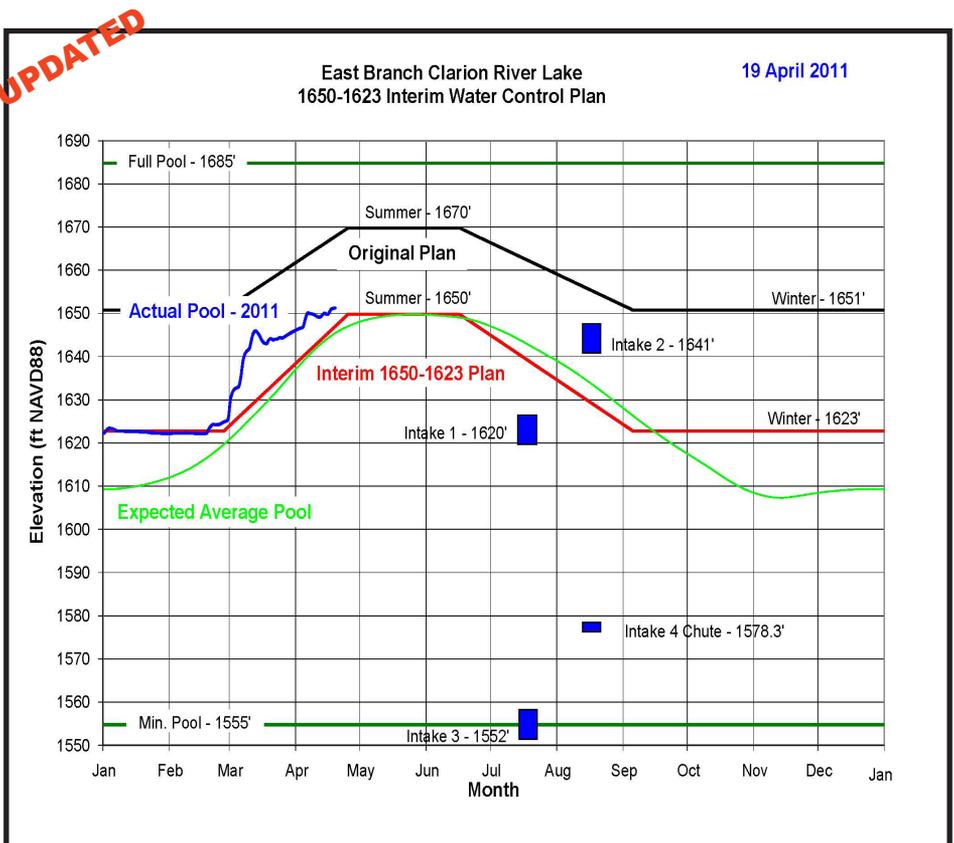


The preconstruction engineering and design phase of the project was initiated in Oct. 2010. The contract for improving the access road and preparing office and material lay-down areas for contractors and the government will be completed in June 2011. Initiation of construction is dependent on receiving concurrence from the Assistant Secretary of the Army for Civil Works. Geologic data is being compiled to facilitate refinement of the risk reduction plan. On-site geotechnical investigations are ongoing.

## 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. Currently, the district is attempting to fill the lake to the restricted summer pool of Elevation 1650, which is 20 feet lower than normal summer pool. The success of filling the lake is dependent of 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 April 11, 2011, East Branch Lake is at 1649 feet. To obtain the latest lake level and outflow information, please visit: [wmw.lrp.usace.army.mil/current/forecast.html](http://wmw.lrp.usace.army.mil/current/forecast.html)

An annual review of how the Corps will operate the reservoir pool for the 2011 recreation season was conducted in March 2011. The district recommended to maintain its current interim water control plan.



## **INTERIM RISK REDUCTION MEASURES**

- Cross-training of Corps personnel from other lake projects was completed in March 2008.
- 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.
- Lighting has been installed in 2009 to enhance monitoring and surveillance.
- More piezometers
- The 2011 annual dam safety refresher training was completed in April.

## **NEPA AND WATER QUALITY**

• 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/rec/lakes/eastbran.htm](http://www.lrp.usace.army.mil/rec/lakes/eastbran.htm).)

• 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 temperature 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 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
- In-Progress Drilling Status Report

### 2009

- Study Management Plan Approval
- Water Temperature Model
- Preliminary Risk Reduction Measures Identified
- Installation of Lighting and Storage Bins
- Finding of No Significant Impact signed for Interim Water Control Plans Environmental Assessment
- Geotechnical Investigations Report
- Conducted Semi-Annual Stakeholder Briefing
- Conducted an Inter-Agency Review of Proposed Long Term Risk Reduction Measures
- Completed Extension of the Federal Boat Launch Ramp
- Conducted Table-Top Dam Safety Exercise with Emergency Responders

### 2010

- Dam Safety Alternatives Screening Report
- Annual Review of Interim Risk Reduction Measures
- Inundation Mapping Complete
- Draft Dam Safety Modification Study for Agency Technical Review
- 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 submitted for Agency Approval
- Dam Safety Modification Study Approved
- Initiate Project Design Phase

### 2011

- Continue geotechnical investigations
- Contract plans for access road improvements and site preparation
- Risk reduction plan refinements
- Initiate risk reduction plan design
- Receive Assistant Secretary of the Army for Civil Works concurrence for construction



To lengthen the time that boaters can access the federal boat launch, the Army Corps extended the concrete portion by 76 feet. The extension lowered the end of the ramp more than 10 feet from Elevation 1625.6 feet to 1614.8 feet. The ramp extension project was completed in November 2009. The Army Corps also waived all launch fees again for the 2011 recreation season.

**For more information, please contact the following:**

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**The East Branch Dam Safety Initiative Team has created a Rumor Control Website to ensure that proper information is being disseminated.**

**Visit [www.lrp.usace.army.mil/rec/lakes/EBRumors.htm](http://www.lrp.usace.army.mil/rec/lakes/EBRumors.htm)**

**Also visit [www.lrp.usace.army.mil/rec/lakes/ebdam\\_safety.htm](http://www.lrp.usace.army.mil/rec/lakes/ebdam_safety.htm)**