



US Army Corps  
of Engineers

# USACE Dam Safety Facts for John Hollis Bankhead Lock and Dam

**Project location and description:** The John Hollis Bankhead Lock and Dam were designed and built by the U.S. Army Corps of Engineers (USACE) and completed in 1980. USACE operates the project for navigation and recreation. The project is located on the Black Warrior River about 23 miles upstream of Tuscaloosa, Alabama.



The main components of the project are a concrete dam with 22 spillway gates and a 600-foot long by 110-foot wide lock and earthen dam. Alabama Power Company owns and operates a powerhouse at the north end of the spillway. The reservoir impounded by the dam is maintained at about elevation 255 feet<sup>1</sup>. The spillway is 1,160 feet long and 62 feet high with a crest elevation of 241.5 feet. The spillway is founded on rock. The gated spillway can pass on the order of five million gallons per second (670,700 cubic feet per second) or a volume of water 14 feet deep on a football field (not including the end zones) each second.

The John Hollis Bankhead Lock and Dam is a run-of-river dam that maintains a navigable pool for river traffic but is not designed to store flood waters. The project is operated such that flows pass through the powerhouse and spillway.

**Benefits associated with Bankhead Lock and Dam:** The project provides approximately \$46 million in annual navigation benefits. The Federal Government does not directly accrue monetary hydropower benefits at this project. Alabama Power and their customer obtain hydropower benefits from the project, as do upstream water users.

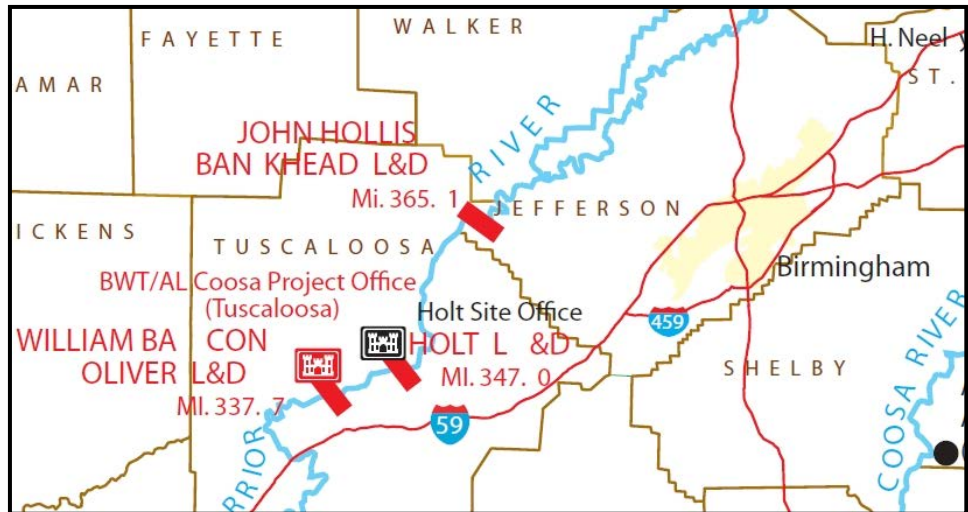
**Risks associated with locks and dams in general:** Every day, thousands of vessels move people, animals, and products across the country via the nation's inland rivers and harbors. This water traffic is a vital component of the nation's economy. However, the navigation infrastructure is aging. Over half of the locks and dams are over 50 years old, and the consequences of this aging infrastructure are increasing incidents of downtime, with disruption to river navigation, and a higher risk of major component failures. Both of which have significant economic risks. Also, Dams reduce but do not eliminate the risk of economic and environmental damages and loss of life from flood events. When a flood exceeds the reservoir's storage capacity, large amounts of water may have to be released that could cause damaging flooding downstream. A fully-functioning dam could be overtopped when a rare, large flood occurs, or a dam could breach because of a deficiency, both of which pose risk of property damage and life loss. This means there will always be flood risk that has to be managed. To manage these risks, USACE has a routine program that inspects and monitors its locks and dams regularly. USACE implements short- and long-term actions, on a prioritized basis, when unacceptable risks are found at any of its locks and dams.

**Risk associated with Bankhead Lock and Dam:** Based upon the most recent risk assessment in 2015, USACE considers this dam to be a moderate risk dam among its more than 700 dams primarily due to

<sup>1</sup> National Geodetic Vertical Datum of 1929 (or NGVD 29)

spillway monolith stability during large earthquake events. USACE has implemented interim risk-reduction measures and/or long-term measures to reduce this risk.

**What residents should know:** One of USACE's primary missions is to ensure that the inland navigation traffic can move safely, reliably, and efficiently and with minimal impact on the environment. Dams do not eliminate all flood risk, so it is important that residents downstream from the dam are aware of the potential consequences should the dam breach, not perform as intended, or experience major spillway flows. The moderate risk to Tuscaloosa, Northport, and Demopolis and the related consequences further downstream



warrant increased efforts on the part of USACE, local emergency management officials, and residents to heighten awareness of the potential flood risk associated with the dam. The potential for loss of life is highest near the dam, and in the vicinity of Tuscaloosa and Northport. Advanced warning of problems and events plays a major role in protecting life and property.

**Public awareness:** Navigation dams are designed to pass large amounts of water on a regular basis, and this means there will always be flood risk for residents, passersby, and visitors along the banks of the river and in the downstream floodplain that has to be managed (see facts below).

Recommendations for Residents	Bankhead Lock and Dam Facts
<ul style="list-style-type: none"> <li>• Living with dams and along rivers comes with risk – know your risk.</li> <li>• Living with dams is a shared responsibility – know your role.</li> <li>• Know your risk, know your role, and take action to reduce your risk.</li> <li>• Listen to and follow instructions from local emergency management officials.</li> <li>• Strongly consider purchasing flood insurance.</li> <li>• Contact your elected local, county, and state officials to make sound flood risk management decisions in your area.</li> </ul>	<p>Annual transportation savings: \$46 million                      Annual goods passing through locks: 4 million tons                      Estimated consequences with rare flood event and breach:</p> <ul style="list-style-type: none"> <li>• Population at risk: ~1,787</li> <li>• Structures at risk: 1,015</li> <li>• Land and property at risk: \$179 million</li> </ul> <p>Estimated consequences with rare flood event and no breach:</p> <ul style="list-style-type: none"> <li>• Population at risk: ~1,646</li> <li>• Structures at risk: No data available</li> <li>• Land and property at risk: \$160 million</li> </ul> <p>National Inventory of Dams (NID) No.: AL01427</p>

Residents should listen to and follow instructions from local authorities. For more information, please contact the USACE Mobile District office. You can also contact the Alabama State Emergency Management Agency at (205) 280-2200, their website is <http://ema.alabama.gov/>.

For additional information about dam safety and living with dams, please visit <http://www.usace.army.mil/Missions/CivilWorks/DamSafetyProgram.aspx> and <https://damsafety.org/resourcecenter/asdso-resources>