



USACE Dam Safety Facts for Norfolk Dam (19 Feb 2014)

U.S. ARMY CORPS OF ENGINEERS

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Project Location and Description: Norfolk Dam was designed and built by the U.S. Army Corps of Engineers (USACE) and completed in 1944. USACE operates Norfolk Lake Dam for flood damage reduction, municipal and industrial water supply, recreation and hydropower.



The main components of the project are a concrete dam, which serves as the main water barrier; a concrete spillway, a segment of the structure used to provide additional release of water from the dam during major flood events; and a powerhouse. The concrete dam (including the spillway) is 2,624 feet long and 216 feet high. The concrete spillway is 480 feet wide with a crest elevation of 552.3 feet ¹. The spillway can pass up to 2,475,880 gallons per second (331,000 cubic feet per second) or approximately the volume of three and a quarter Olympic size swimming pools each second. The powerhouse contains two generators that each has 40,275 kilowatt capacity.

Lake level is dependent on rainfall and the consumptive authorized use of the conservation storage. Power production is the larger of these authorized purposes. After a prolonged period of below normal rainfall, the pool level will generally fall several feet into the conservation pool due to power generation. During a period of heavy rainfall, the lake will rise as floodwaters are held until the swollen streams and rivers below the dam recede and can handle the release of stored water without damage to lives, property or the environment. In extreme conditions, water may need to be released to protect the dam's integrity even though streams and rivers may have already reached or exceeded their capacity.

Benefits associated with Norfolk Dam: This dam provides \$4.2 million in annual flood damage reduction. Norfolk Lake provides 2,400 acre-feet (ac-ft) ² of water to a number of communities downstream of the dam. The annual water supply benefits gained from Norfolk Lake amount to nearly \$571,000. Annual recreational benefits to the area are \$7.6 million. This dam has provided \$16.5 million in annual hydropower benefits since placed in service.

Risks associated with all dams: 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 dams regularly. USACE implements short and long term actions, on a prioritized basis, when unacceptable risks are found at any of its dams.

Risk associated with Norfolk Dam: Based upon the most recent risk assessment of Norfolk Dam in 2014, USACE considers this dam to be a moderate risk dam among its more than 700 dams because of the risk associated with overtopping of the dam and erosion on the right abutment during a rare flood event or potential instability of the dam during very rare flood or seismic events.

¹ Mean Sea Level is the same as North American Vertical Datum 1988 (or NAVD88)

² One acre-foot is equal to 1/2 Olympic-size swimming pool

FOR PUBLIC RELEASE

U.S. ARMY CORPS OF ENGINEERS – LITTLE ROCK DISTRICT (SWL), SOUTHWESTERN DIVISION (SWD)

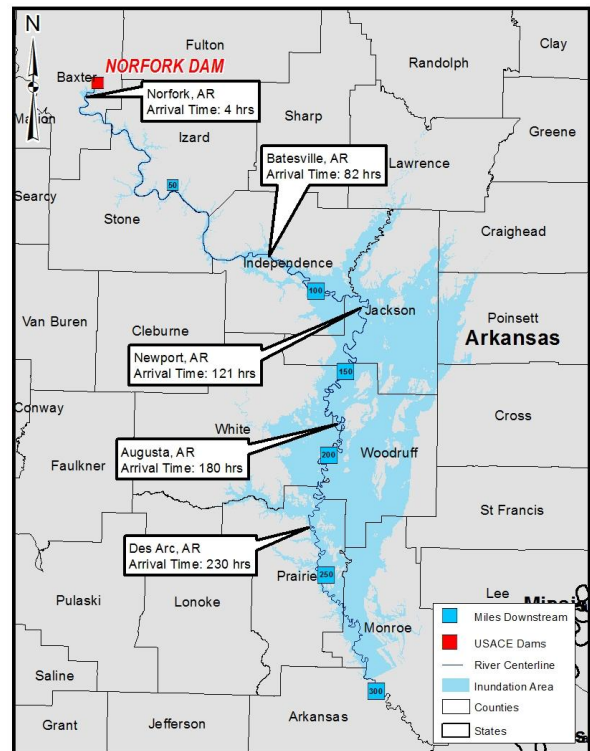
700 WEST CAPITOL, ROOM 7530, LITTLE ROCK, AR 72201, <http://www.swl.usace.army.mil/>

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What residents should know: 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/gated outlet flows. The high risk in Norfolk, Arkansas; and the related consequences farther 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 primary areas impacted should the dam breach with a full reservoir during a rare flood event; or experience major spillway/outlet works flows are shown in the map. The potential for loss of life is *highest within a couple of miles of the dam with the loss of life concerns decreasing substantially beyond 60 miles downstream of the dam.* Advanced warning of problems and events plays a major role in protecting life and property. See the map for a general indication of flooding with a rare flood event and breach.

Public Awareness: Dams are designed to pass large amounts of water on a regular basis and this means there will always be flood risk that has to be managed (see facts below).



Map inundation area displayed is the rare flood event and breach. Map Disclaimer: Actual areas flooded and flood arrival times will depend on specific flooding and failure conditions and may differ from the areas shown on the map.

Recommendations for Residents	Norfolk Dam Facts
<ul style="list-style-type: none"> Living with flood risk reduction infrastructure comes with risk—know your risk. Living with flood risk reduction infrastructure is a shared responsibility—know your role. Know your risk, know your role and take action to reduce your risk. Listen for and follow instructions from local emergency management officials. Strongly consider purchasing flood insurance. Contact your elected local, county and state officials to make sound flood risk management decisions in your area. 	<p>Estimated consequences with rare flood event and breach:</p> <ul style="list-style-type: none"> Population at risk: ~9,400 Structures at risk: 7,078 Land and property at risk: No data available <p>Estimated consequences with rare flood event and no breach:</p> <ul style="list-style-type: none"> Population at risk: No data available Structures at risk: No data available Land and property at risk: No data available <p>Damages prevented to date: \$68.4 million (1944-2009) National Inventory of Dams # AR00159</p>

Residents should listen to and follow instructions from local authorities. For more information, please contact USACE Little Rock district office using the information on this fact sheet. You can also contact your local emergency management office:

Marion County Office of Emergency Management at 870-449-5353, Baxter County Office of Emergency Management at 870-424-6252, Izard County Office of Emergency Management at 870-368-4113, Stone County Office of Emergency Management at 870-269-6611, Independence County Office of Emergency Management at 870-793-8816

For additional information about dam safety and living with dams, please visit <http://www.usace.army.mil/Missions/CivilWorks/DamSafetyProgram.aspx> and http://www.damsafety.org/media/Documents/DownloadableDocuments/LivingWithDams_ASDSO2012.pdf