

Missouri Private Dam Owners Left Stranded Without Government Aid

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It rained all day yesterday. And all night. And all this morning. And the water in the lake is pushing, straining against the earthen wall that formed the lake 50 years ago. The dam has a spillway to shed the excess water. But it's not big enough to get rid of the water fast enough.

Physics – and 50 years of deferred maintenance – takes over. The dam crevasses, and water pours out, following the long-dead creek bed and pouring into the community below.

Missouri has lots of dams. And it has one big dam problem: No one is checking on them, thanks to a quirk of state law.

Missouri is one of only three states that doesn't regulate any privately owned dams less than 35 feet tall, regardless of the amount of water they impound or their hazard level, according to the Association of State Dam Safety Officials' 2011 Hydrologic Safety of Dams Survey. Most states regulate dams more than 25 feet tall with certain levels of water storage. Missouri depends on landowners to regulate their own dams that are less than 35 feet tall.

"Dam owners are not civil engineers," said Erik Loehr, an MU engineering professor. "It's a dam. It's holding back the water. And water's pretty. And we can put a boat on it. ... They just don't really even know what they're supposed to be looking for."

Missouri has 5,356 dams, 1,457 of which are considered "high hazard," according to the ASDSO 2017 Dam Safety Performance Report. A "high-hazard" dam is one that has the greatest potential to cause loss of property and life in the event of a failure. Missouri has more high-hazard dams than any other state in the nation, according to the American Society of Civil Engineers' 2013 Report Card for America's Infrastructure.

Mark Ogden, a technical specialist with ASDSO and a member of the ASCE Committee for America's Infrastructure, says Missouri's broad and unusual regulation standards can lead to highly damaging failures.

"That dam could be 34.9 feet high. ... [but] could be storing thousands of acre-feet of water," Ogden said. "If there are homes downstream of that and that dam fails, those homes are in jeopardy. The people who live in those homes are in jeopardy. But the state really has no recourse, no authority to oversee that to make sure that those are being maintained properly."

The Glover Spring Lake dam in Callaway County was 33 feet tall when it failed to properly expel excess rainwater last August, causing flooding of the surrounding residences, damage to a bridge downstream and a partial collapse of the dam itself.

Ron Mirts, a Glover Spring Lake resident and member of the homeowners' association that owns the dam, says the association had to pay thousands of dollars to repair the dam on top of paying for damages to their own homes.

"Our club spent \$58,000 rebuilding the dam," Mirts said. "Then the Department of Natural Resources ... said the spillway is not wide enough, so we have to hire an engineer, and our low bid is another \$18,000."

Ogden says a single owner's lack of the knowledge, money and time required to maintain a dam can affect a whole community.

"The lack of authority to inspect those dams less than 35 feet high could be detrimental to the dam owners," Ogden said. "Their own judgment is that they don't need to do anything, but

that's probably not in their best interest. ... The biggest issue is the people who live downstream of those dams, and the state really isn't looking out for their interests.”

Missouri's many aging, unregulated, high-hazard dams are reflective of the environment that caused the formation of the ASDSO in 1983, following the death of 39 people in the 1977 failure of a 78 year-old dam in Georgia.

Missouri's dams are similarly increasing in age, as many of them were built back in the '50s, '60s and '70s — and some even before that — according to the Missouri Department of Natural Resources' 2007 Missouri Dam Report By County.

Ogden says new engineering standards can mean older dams are insufficient.

“The things that were assumed to be the most up to date and sufficient 50, 60 years ago are now known that that's not really sufficient,” Ogden said. “Without having inspected it properly over the years, there is a very high likelihood that you're going to run into issues.”

Of Missouri's 1,457 high-hazard dams, only 465 are regulated, according to the Dam Safety Performance Report. Ogden says that, despite the state's efforts to educate dam owners, the lack of regulation still makes it difficult to prevent disaster.

“In general I think that they have a pretty good program in terms of their resources,” Ogden said. “Close to 85 percent of their high-hazard potential dams have an emergency action plan, and I know that they've done a lot in recent years to increase those numbers ... for those that they regulate. And that's the big issue right there. ... There are close to a thousand high hazard potential dams in the state that are going unregulated. ... No one is inspecting them, ... so that's a very serious concern and something that the state really needs to address.”