

Inspection records indicate 13 of the 114 “high hazard” dams across Oklahoma are rated in poor condition. But the rating can mean a number of things not necessarily related to the integrity of the structure, according to a state engineer who examines those records. Oklahoma ranked 29th among states that have dams with poor ratings as of 2017, the latest year compiled by The Associated Press in an examination of dams nationwide. An updated list for Oklahoma still shows 13 dams with poor ratings. Two listed in 2017 have since been repaired but two more have been added back to the list, according to Zachary Hollandsworth, a dam safety engineer in the Planning and Management Division of the Oklahoma Water Resources Board’s Dam Safety Program. The past year has been a tough one for smaller structures that are either state-owned, or owned by municipal or private entities, he said. Structures nearest Tulsa included on the list are Hominy and Pawhuska lakes in Osage County and Weleetka Lake in Okfuskee County. No federally owned dams operated by the U.S. Army Corps of Engineers were on the list, nor were any of the larger water retention areas or ponds built under U.S. Department of Agriculture guidelines with Natural Resource Conservation Service funding. Hollandsworth said the single word “poor” could mean a lot of things, but shouldn’t be interpreted as “neglected.” All dams in Oklahoma that are rated as high hazard are inspected annually, if not more often, he said. Owners of the lakes hire engineering firms to inspect their structures and those reports are submitted to the OWRB for approval. With double the average rainfall amounts across much of the state this past year, several structures have had more than one inspection, one dam had a failure and some repairs have been necessary, he said. “Because of all the rain there have been some problems. Nothing too serious, but we were pretty busy this year,” Hollandsworth said. “This year we did see a failure of Cushing Lake dam (near Ripley) through the spillway foundation. Since the lake has been drained because of the failure we think that the danger level is low at this time,” he

said. "Lakeside Dam in Oklahoma City was in danger of failing before emergency repairs were ordered. It has been fixed by the owner and is in stable condition."

High-hazard dams, basically, are those that have people living below them, he said. For example, three homes are within 300 yards " one just about 40 yards " from the base of the dam that holds Hominy Municipal Lake, the largest among those listed as "poor" for Oklahoma. Built in 1956, the dam created a lake for recreation just west of the Osage County community. Its 165 surface acres offer fishing and boating and along its 6 miles of shoreline are playgrounds, fishing docks, picnic areas and RV sites. The dam in its December 2017 report rated "poor," according to the AP. "We have an inspection around December every year and we just had it inspected a second time this year," said Hominy City Manager Jimmie Ratliff. "OWRB asked for an extra inspection this year because of all the rain." Ratliff said the most recent inspection, completed by Cohen Engineering, found that the dam is in good shape but a needed repair remained and it is one the City Council has found funding to fix. Those repairs should begin within a year, he said. A 600-foot-long concrete channel at the base of the dam's spillway directs water along a path near the base of the dam toward the creeks that flowed through the area naturally before the dam was built. "The channel below the spillway has been in rough shape for awhile but the dam itself is in good shape," Ratliff said. "There are new standards and better ways doing things ... It's long beyond time it was fixed and we finally have the funds to do that." Weleetka Lake in Okfuskee County has some problems similar to those at Pawhuska but also has problems due to overgrowth of vegetation that prevented full inspections and that also could be undermining the integrity of the dam, according to an excerpt from this year's report on the dam. Pawhuska has sloughing on the back side of its dam with repairs waiting on word from the Federal Emergency Management

Agency regarding funding, according to Pawhuska City Manager Dave Neely. "Regardless of what they decide we will make the repairs, but it would be good to have that federal money," Neely said. Repairs include work around a spillway and changing the face of the dam so it is less steep, allowing for mowing, he said. "It's going to be better than new," he said. Damage seen this year with record-setting rainfall were not unexpected, Hollandsworth said. "Basically any time you have sustained high flows like we were seeing you can expect something to happen," he said. "Erosion is common around spillways and downstream in your channels. That's a lot of what we were looking at." A few other dams had what Hollandsworth called "minor slides" on their embankments, a condition resulting from soil saturation and expansion and contraction of clay soils because they expand as they are soaked and shrink when dried. Immediate consecutive cycles of being thoroughly soaked and dried can cause some sloughing. "It doesn't mean the embankment is not doing its job, but that top layer can become softer and we did see some minor slides on a couple of dams and those were addressed pretty quickly," he said. Dams, even those built nearly 100 years ago, can still last for generations, Hollandsworth said. "In general, these dams are showing signs of their age, and are in need of increased maintenance and repair," Hollandsworth said. "Many of them are difficult to thoroughly inspect due to excess vegetation and may be rated "poor" because of uncertainties that arise from that." The OWRB is actively working with the owners of all of the dams to help bring them back up to standard to protect both the reservoirs and the people downstream, he said. "This includes providing engineering services to these communities to form a plan to address these problems, and helping them form a schedule of work to be completed that will be achievable with the limited funds that many of the communities often have," he said. FEATURED VIDEO Kelly Bostian 918-581-8357 kelly.bostian@tulsaworld.com Twitter: @KellyBostian