OKLAHOMA WATER RESOURCES BOARD
DAM SAFETY QUARTERLY

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NEWSLETTER OF THE OKLAHOMA DAM SAFETY PROGRAM

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OWRB Uses FEMA Grant to Fund Engineering Costs for High Hazard-Potential Dam Repairs

The Oklahoma Water Resources Board (OWRB) coordinates the Dam Safety Program to ensure the safety of more than 4,700 dams in the state. Over 400 of these are considered high hazard-potential dams because a dam failure would likely cause loss of life downstream. Recent inspection reports based on the National Inventory of Dams (NID) condition assessment indicate several high hazard-potential dams in Oklahoma are in poor or unsatisfactory condition and in need of modification or repair. Using a portion of the Federal Emergency Management Agency (FEMA) National Dam Safety Program grant awarded to Oklahoma each year, the OWRB aims to reduce the risk of life and property downstream by funding the engineering costs associated with repairs and modifications to these deficient dams.

Carlton Lake Dam, NID ID OK02175, in Robbers Cave State Park.

Along with reimbursement for engineering costs, funding recipients will receive free detailed plans and specifications as well as technical assistance from the OWRB and a third party consulting engineer. Recipients are required to submit an Application to Repair/Modify a Dam and begin construction within 2 years after the OWRB provides the completed plans and specifications.

Funds are prioritized and awarded by the OWRB according to the size of the dam's downstream population, the risk of property loss, the size of structures and water capacity, and the latest inspection report's condition assessment.

Hominy Lake Dam, NID ID OK13046.

To date, the OWRB has awarded FEMA funds to two entities: the City of Hominy and the Oklahoma Department of Tourism and Recreation. The City of Hominy was awarded $15,000 for engineering costs on August 1, 2015 and signed an agreement with Cardinal Engineering in April 2017 to begin repairing the dam at Hominy Lake, which supplies water to over 3,500 residents. The Oklahoma Department of Tourism and Recreation was awarded $27,000 on July 6, 2017, to pay for engineering costs associated with repairs to Carlton and Clayton lake dams in southeast Oklahoma. Robbers Cave and Clayton Lake State Parks reportedly saw more than 950,000 visitors last fiscal year.

For questions about the Dam Safety Program and this initiative, contact Yohanes Sugeng, P.E., at (405) 530-8800.

Continuing Education for the Oklahoma Real Estate Commission

Last April, OWRB Dam Safety and Floodplain Management staff led a free one-hour workshop for twenty realtors at Century 21 Goodyear Green in Edmond. Dam Safety staff focused on the responsibilities of dam ownership and how realtors can help their clients avoid or ease associated liabilities. Staff also discussed the hazard-potential reclassification process and its impact on real estate sales.

The OWRB, in cooperation with the Oklahoma Real Estate Commission, will continue to offer these free workshops to licensed realtors and brokers across the state. Attendees may earn up to three Continuing Education (CE) credits based on the length of the workshop. Future workshops will be scheduled based on interest, so please email Emma Moradi or call (405) 530-8800 if you would like to attend.

OCT 31 - NOV 1, 2017

OKLAHOMA GOVERNOR'S WATER CONFERENCE & RESEARCH SYMPOSIUM

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NEWSLETTER OF THE OKLAHOMA DAM SAFETY PROGRAM

Safety at Low Head Dams

Low head dams are considered some of the most dangerous hydraulic structures in Oklahoma because they can create powerful backflow currents that trap swimmers. When the dams are constructed, upstream water is slowed and diverted away from the main channel. The water that flows over the dam creates backflow current that can force victims underwater and spin them around. The combined forces produce a practically inescapable circular trap for even an expert life-jacket-clad swimmer.

Low head dams are generally constructed to divert water to irrigation ditches for agricultural use. Since the dams are usually less than 15 feet high, they do not fall within the OWRB's jurisdiction.

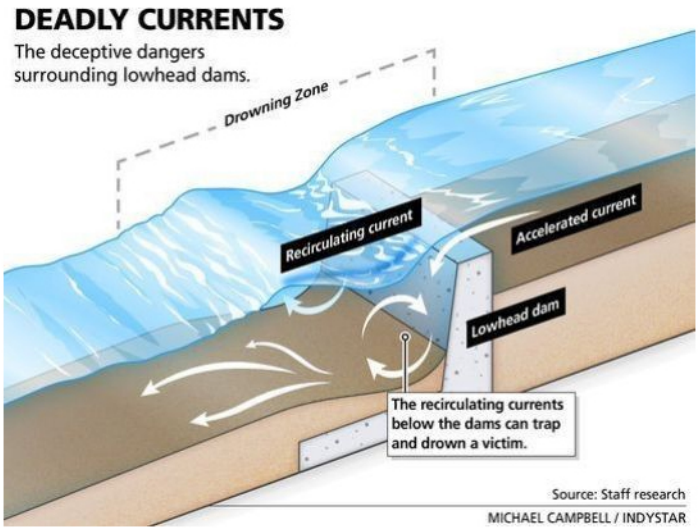

Illustration from the Coloradoan, June 24, 2017.

For more information about safety at low head dams, refer to the Indiana Silver Jackets' Low Head Dam Signage and Outreach and Over, Under, Gone: The Killer in Our Rivers.

Oklahoma Society of Professional Engineers Conference

In June, Dam Safety engineers gave a presentation at the Oklahoma Society of Professional Engineers conference in Oklahoma City to about 80 attendees. Topics included Oklahoma's Dam Safety rules and regulations with an emphasis on hazard-potential evaluation, the reclassification process, and dam breach modeling. The engineers also discussed methods for both simplified and detailed dam breach analysis along with their respective computational requirements, assumptions, and preliminary results. Staff concluded with a HEC-RAS 2D modeling demonstration using the breach analysis map for Holdenville Lake.

HEC-RAS 2D Technical Workshop

The Dam Safety Program hosted a HEC-RAS 2D technical workshop last April for fifty-four engineers representing private firms and local government from 14 states. During the 3-day workshop, Mr. Garrett Johnson, P.E., and Mr. Patrick Miles, P.E., of Freese and Nichols, Inc., discussed the applications and benefits of HEC-RAS 2D and explained the components and requirements for running models. An in-depth modeling exercise was performed under the instructors' supervision, which focused on troubleshooting and analyzing the model's results. Throughout the course, participants shared their technical expertise and were given the opportunity to contest the assumptions and outcomes of the models.

Garrett Johnson, P.E., leads participants in a HEC-RAS modeling exercise at the OWRB's technical workshop in April.

Upcoming Events

July 26-28	ASDSO Seminar: Soil Mechanics for Earth Dam Design and Analysis, Denver, CO
August 1-3	ASDSO Seminar: Inspection and Assessment of Dams, Salt Lake City, UT
August 8	ASDSO Webinar: NRCS Dam Design and Dam Safety Resources: Policy, Procedures, and Tools
September 10-14	2017 ASDSO Annual Conference, San Antonio, TX
October 31-November 1	Oklahoma Governor's Water Conference & Research Symposium, Embassy Suites, Norman, OK

Julie Cunningham, Executive Director
Oklahoma Water Resources Board

Kent Wilkins, Chief
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Dam Safety Program

The Oklahoma Dam Safety Act recognizes that properly constructed, operated, and maintained dams used to impound water and create reservoirs for public and private beneficial uses constitute vital parts of the State of Oklahoma's water resources, and authorizes the Oklahoma Water Resources Board to regulate the construction, operation, and maintenance of dams to protect lives and property. Please e-mail comments and article ideas to pubinfo@owrb.ok.gov.