

News Release

Oklahoma Conservation Commission

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Oklahoma's upstream flood control dams working hard for Oklahoma's people, land and infrastructure

As the weekend night flickered with lightning, rumbled with thunder and flowed with intense late June rains, Oklahoma's upstream flood control dams were working just as they were designed. That critical work has continued into the days to follow.

Oklahoma leads the nation with 2,107 upstream flood control dams. Regardless of the hour of the day or the ongoing hours of work needed, these flood control dams are doing their jobs to protect the people, land and infrastructure of Oklahoma.

In a five-day period -- 6 a.m. Friday, June 25 to 6 a.m., June 30 -- flood control dams spread through 14 Oklahoma counties resulted in \$10.1 million in monetary benefits in terms of damages that did not occur because of the presence of these dams. There were 121 DamWatch system "Rainfall Alerts" in those 14 counties -- Caddo, Comanche, Creek, Custer, Kiowa, Lincoln, Logan, Noble, Oklahoma, Pawnee, Payne, Rogers, Washington, Washita -- and 12 "Auxiliary Spillway Flow Alerts" in three of those 14 -- Lincoln, Noble, Payne counties. There were 22 different watershed that received alerts within the 14 counties.

Chris Stoner, Natural Resources Conservation Service State Conservation Engineer said on Wednesday that there have been, "No reports of damage to any of the dams inspected to date."

"I never complain about a significant Oklahoma summer rain," said Tammy Sawatzky, Oklahoma Conservation Commission Director of Conservation Programs. "The rainfall over the past week is a real reminder of the importance of the local, State and National investment in Oklahoma's flood protection and flood prevention infrastructure. The 2,107 dams built under the USDA Small Watershed Program are a real asset when we have a weather week like the one we are in this week. The repeating rainfall reminds us of the importance of the financial and human resources Conservation Districts invest in maintaining the protection. This June rain will help us stretch grazing on our pastures, green our gardens and make for an extra mowing or two out on the front lawn. The flood protection provided to Oklahoma through the Small Watershed Program will protect life and property as well as reduce potential damage from uncontrolled flooding. Those are all wins if you ask me!"

“The storms we get here in Oklahoma can and do strike anywhere at any time,” Stoner said. “Of the 14 high hazard potential dams that received rainfall alerts, only two of those dams were originally constructed to meet high hazard potential criteria. Luckily, four others have been rehabilitated and now meet current dam safety criteria. However, the remaining eight that received heavy rainfall in this event along with over 200 other high hazard potential dams in the state are still in need of rehabilitation. They did their job, this time, but all of Oklahoma’s flood control infrastructure continues to age and will need continued support from the federal, state, and local partners.”

Watershed projects were based on the conservation principle of holding the raindrop high in the watershed as close to where it strikes the ground as possible.

So, nine out of 10 Oklahomans are living within 20 miles of a flood control dam. Oklahomans live, work and play daily under their protection every day. Flood control makes modern Oklahoma life possible in many rural communities.

The watershed programs are one of the best examples of federal, state and local partnerships to address natural resources issues. Watershed projects are federal-assisted, not federally owned. NRCS provided funds to plan, design, and construct the dams. Project sponsors, typically local conservation districts, are responsible for operation and maintenance of the dams to assure they continue to function as there were designed,

Oklahoma’s flood control dams have established a \$2 billion infrastructure that provides benefits to thousands of citizens. In fact, it’s estimated that the dams and accompanying conservation practices in the watersheds provide approximately \$96 million in benefits each year.

That’s where the DamWatch system comes into play.

A Natural Resources Conservation Service (NRCS) “National Watershed Benefits” computer model estimates the daily monetary benefits resulting from watershed projects for a specific storm. These “benefits” are essentially the damages that would have occurred from that storm had the dams not been built.

“DamWatch is my ‘Go To’ site for all things related to our dams,” Stoner said. “I have file cabinets full of drawings and documents related to the dams literally steps away from my desk, but I go to DamWatch first. The graphical display easily takes me to the dam or dams of interest. I can see the current condition of the dam, based on the most current aerial photo, and look at things going on both up and downstream.”

From his USDA NRCS state office on the campus of Oklahoma State University in Stillwater, Okla., Stoner can access the As-Built drawings for all dams across the state and zoom in on areas that may be hard to interpret even from the original documents.

“I can see if any trip reports or photos have been uploaded that may shed additional light on an issue,” he said. “And, I can write a ticket about a dam that gets to all the pertinent staff with the click of a button.”

The flood control dams not only provide flood and erosion control to over two million acres of agricultural land in downstream flood plains, but they also provide sources of water for livestock and irrigation and habitats for wildlife. Forty-two of the flood control dams were constructed as multi-purpose structures, which provide municipal and rural water supplies and recreation areas for local communities.

Benefits provided by the flood control dams include: Protecting 2,756 county and highway bridges; Providing a reduction in flooding for 41,744 farms and ranches; Trapping 19 million tons of sediment each year, which would otherwise end up in major streams and lakes; and creating or enhancing 90,979 acres of wetlands.

The number of dams built each year peaked in 1965 when 157 dams were built. During the decade of the 1960s, an average of two watershed dams were constructed each week. Many of the watershed dams in Oklahoma are reaching the end of their 50-year designed lifespan. Since most of the dams were designed with a 50-year design life, during the decade of the 2010s, two dams came to the end of their evaluated life each week. So, in addition to 1,423 watershed dams that reached the end of their evaluated life in 2020, an additional 172 dams will reach that mark within the next five years.

However, just because a dam exceeds its evaluated life, it does not mean that it won't safely function as designed for many years longer if properly maintained. However, funds are critically needed to maintain these dams so that they can function as designed and remain safe. As previously mentioned, watershed dams are a part of an estimated \$2 billion of the public infrastructure that must be attended to. If funds are not provided for maintenance, not only will devastating flooding return in the areas prior to the projects being constructed, but lives will be at-risk.

Rehabilitation of these aging dams is a priority in Oklahoma so that they can continue to protect people's lives, property, and natural resources for the next 100 years. To date, 58 watershed dams have been funded for rehabilitation to meet current safety standards; 38 of these have been completed. The remainder are in various stages of design or construction.

"Think about these intensive rains in Oklahoma," OCC Executive Director Trey Lam said. "Any loss of property and damage to land is a tremendous loss. That's exactly why the benefits of these dams are so important, and that's what these watershed projects do, they protect areas from flooding losses that used to occur frequently before the dams were built. In addition to protecting crops and farmland, some of the dams also protect lives. They also are designed to reduce damages to buildings, agricultural products, roads, bridges and so many other vital aspects of our daily lives."

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