



Epoch 1,000 Year Rain Event hits Nashville

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An enormous volume of water descended upon the Nashville area the first two days of May 2010. The record rainfall for that two day period was more than double the all time record for any two day event. The flooding that resulted was described by the U.S. Army Corps of Engineers as a "1,000-year event."

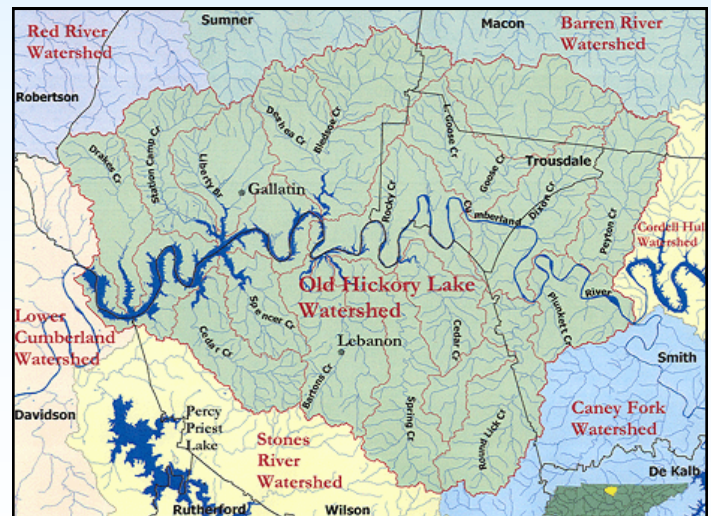
According to the National Weather Service, rainfall records were shattered the weekend of May 1st and May 2nd, when copious amounts of rain fell across Middle Tennessee. In Nashville a new two day rainfall record was established when 13.57 inches fell on May 1st and May 2nd which shattered the previous record of 6.68 inches set on Septem-

ber 13th and 14th 1979. A new calendar day rainfall record was set when 7.25 inches of rain fell on May 2nd. This also established a new record for the most rainfall for any calendar day in Nashville's history.

In addition to Nashville, many other counties, in-

cluding the 975 square mile Old Hickory Lake Watershed, had rainfall totals of 15 to 18 inches. This would translate to over 200 Billion gallons of water entering the Cumberland River from the Old Hickory Lake Watershed alone.

Water was so high behind the Old Hickory Dam that if hadn't been released, the dam may have collapsed. There was a staggering amount of water released into an already swollen river on the evening of May 2 and in the first hour that the dam was opened to its fullest extent, there were 5.4 billion gallons of water released into the Cumberland River, cresting at 26 feet above its normal level at Nashville, 25 miles downstream.



The Case for Middle Tennessee:

- No state income tax.
- Great property values.
- Low property taxes.
- Low auto and property insurance rates.
- Great medical facilities.
- Four distinct seasons with mild winters.

Nashville Flood of 2010 — The Full Story



The morning of Saturday, May 1, Old Hickory lake was resting normally, at 444 feet above sea level, just as it had been the day before. But throughout the day the weather changed dramatically. Rains that had swept in from the west intensified, and by the afternoon, creeks and tributaries throughout Middle Tennessee were spilling over their banks.

By Sunday night, water was ripping through the heart of Nashville. The Gaylord Opryland Resort & Convention Center had evacuated 1,500 guests. Water was quickly rising into downtown streets. And residents in Bellevue, Antioch and other areas had been scrambling throughout the day to save any possessions they could — or simply survive the flash floods.

The epic rainfall, along with calculations and decisions made by a series of agencies during the May 1st and 2nd weekend's historic floods, plays a central role in understanding how this disaster was able to wreak so much havoc in Nashville and across the region.

U.S. Sen. Lamar Alexander has promised a Senate committee hearing to understand what happened. Gaylord Entertainment Chairman and CEO Colin Reed continues to agonize over why emergency personnel had told him the Cumberland would stay below protective levees around the hotel, while his own security staff witnessed a

more urgent situation.

For their part, Army Corps of Engineers officials say they see nothing they would have done differently — in fact, they say their actions prevented even further damage to downtown and a washout of the Metro-Center business district.

Two to 4 inches of rain was forecast for the Nashville area Saturday and Sunday — not the more than 17 inches that fell in some areas. By Friday afternoon, the weekend rain forecast had grown increasingly wet, with some flash flooding expected.

While the weekend's rain forecast meant small tributaries and creeks could fill up, the Cumberland was expected to handle the additional water without major flooding. But by Saturday morning things began to change. The forecast put out for Sunday had grown worse as well, and Nashville and the Cumberland watershed could be in the bull's-eye of the storm.

That afternoon the National Weather Service issued flood warnings for Middle Tennessee. Up to 10 inches had already fallen in some areas. Mill Creek, which feeds into the Cumberland River across from Shelby Bottoms, had become so flooded that its waters engulfed I-24, pushing cars and even buildings along the interstate. Even with the heavy rains, much of Middle Tennessee continued to conduct its business Saturday afternoon.

But at Old Hickory Lake, water began rising quickly. Water was already moving through the dam as usual to generate electricity, but authorities decided to open the spill gates to relieve the growing lake levels at 1 p.m. Saturday, according to Corps records. Some question why they didn't release more water earlier in preparation for the heavy rains.

The standard protocol is not to release water until a pool fills. Releasing a little extra water can simply put more flooding on those farther downstream. Downstream, flooding was already under way as Mill Creek,



Army Corps of Engineers struggled with dams, forecasts



the Harpeth River, the Red River and other streams grew with the rainwater that would be dumped into the Cumberland.

At 5:30 p.m., the National Weather Service issued more flood warnings and the dangerous conditions had spread to counties to the east. By 7 p.m., the Cumberland River in downtown Nashville had risen more than 10 feet that day. About this same time, downriver to the west at the Corps' Cheatham Lock and Dam, the crew there faced a crisis. Rising waters were overtaking the entire facility, which is one of the smallest in the river. The crew shut the turbines off and started to evacuate. They placed the mobile electronic equipment that operates the lock into trucks and left before the facility was submerged. Furniture and files in the office were destroyed. The floodwaters moved in so fast and spread so wide that the Corps even lost parked vehicles that couldn't be evacuated in time.

But at this point, much of the Corps' focus was around Nashville, with rain continuing and the little fingerlets of

streams that lace the area pouring into the already racing and spreading Mill, Richland, Whites, Browns and other creeks that feed into the Cumberland.

At Old Hickory, from noon Saturday to 7 a.m. Sunday, the Corps made adjustments to the flood gates 10 times as they struggled to manage the massive amounts of water that were flowing from tributaries into the lake. By 6:30 a.m. Sunday, the river in downtown Nashville had risen nearly 10 feet higher, and was just 3 feet below the 40-foot flood stage, according to Corps records, even though there had been nearly a seven-hour lull in the rain.

Old Hickory Lake, while it looks large, is small when it comes to holding storm runoff. It sits in the flow of the Cumberland River, and was not designed as one of the four, deep flood control projects in the Cumberland system. The flood control projects are J. Percy Priest, Center Hill, Dale Hollow and Wolf Creek. The water at Old Hickory had gone

up 2 feet from the night before to 447.88 feet above sea level, and it was getting closer to the critical 452-foot mark. At the 452 level, the Corps has few options. They either let the water flow over the dam, which undermines the dam, or raise the spill gates and create a controlled free-flow.

The Corps was still hopeful on Sunday morning that they were going to keep Nashville below flood stage. Within hours, those hopes were shattered. The heavy rains that morning kept pouring water into the Cumberland basin. By 10 a.m. Sunday, downtown Nashville had reached flood stage of 40 feet. The water level at Old



Andrea Silva and Jamey Howell clung to Howell's Jeep as flood waters overtook the vehicle at the intersection of Saundersville Road and Lower Station Camp Creek. They survived the ordeal.

Old Hickory Dam — a Controlled Free-Flow.



Hickory Lake, above the dam, had climbed almost two more feet to 449.40, and it would keep rising for the next three hours before leveling off at 451.45, just a half foot from the water spilling over the gates. The dam crew was trying to get control of the water pouring into the lake, while trying to minimize flooding downriver.

By Sunday afternoon, the Cumberland river in downtown Nashville had reached 45.64 feet as Mayor Karl Dean, his police chief, fire chief and others stood in the lobby of the city's emergency management building atop a hill near Belmont University. The rains were scheduled to pass that evening and predictions were the crest would come through downtown around 48 feet sometime Sunday night. At Old Hickory Lake, the discharges would reach more than 200,000 cubic feet per second by 6 p.m. that evening — three times the amount passing through the dam when the day started, according to Corps discharge data.

And there was another problem emerging. J. Percy Priest Lake, which dams up the Stones River, and flows into the Cumberland between Old Hickory Dam and downtown, was filling up

fast. The Corps had hoped to hold back water from Percy Priest, to allow the waters from Old Hickory to pass through downtown, and shave some feet off the flood crest. But the furious rains Sunday had disrupted that plan. Waters at Percy Priest had

climbed four feet Sunday to reach 498 feet above sea level when the day closed — that's six feet below the top the dam.

Opryland began evacuating Sunday evening and city officials started to raise concerns about a leaking levee in MetroCenter, causing an evacuation there. The Corps was concerned about what was happening downstream and what damage the waters may cause, but believed there was no other choice but to release water from Old Hickory or risk losing control.

By 6:30 that morning the waters on Old Hickory had dipped below 451 feet, and would drop below 450 by noon. Originally, the Cumberland had been expected to reach its highest point overnight, but it was still rising Monday morning.

As the floodwaters continued to pour over the banks of the Cumberland in

downtown Nashville on Monday, the Corps' work was not done. The water kept rising at J. Percy Priest Dam, reaching 504.01 feet by 6 p.m. Monday as the water crested that same hour in Nashville at 51.86 feet.

The Corps' leadership believes the actions of their team during the 48-hour storm that dumped a record 13 inches at the Nashville Airport, and more in some places, lessened the possible damage. They held the Percy Priest Dam level above 444 feet, near the top of the dam, from late Monday until late Thursday, measuring releases to minimize problems downstream, they said. Flooding takes top priority, and protection of the dams to prevent whole communities from being crushed by the walls of water behind them is part of that.

The Corps knows accusations and rumors are already afoot that it might have flooded people on purpose or failed in other ways that caused unnecessary damage downstream. In fact, the Corps is not sitting by idly while the talk festers. Their public affairs office is planning to include a link on its website for the public to ask about rumors or other questions they have about their actions during the flood.



GAC Flood Relief Telethon at the Ryman Auditorium



The Sunday May 16th “Music City Keep on Playin’ – A Benefit for Flood Relief” telethon on GAC was stocked with country music’s biggest stars and their best-known songs and was punctuated by the generosity of the genre’s singers and its fans.

Brad Paisley set the tone for the Ryman Auditorium evening after kicking off the three-hour event with a performance of his hit “Welcome to the Future”: He and his wife actress Kimberly Williams-Paisley, who co-hosted the show, donated \$100,000.

“It’s such a great thing to see all these wonderful people out there,” Paisley said from the stage. “It’s time we start this off with a donation.”

As of 11:45 p.m. more than \$1.7 million had been donated to the Community Foundation of Middle Tennessee, and the money came from sources ranging from music fans to the evening’s artists and corporations.

In terms of performers, after Paisley, a broad mix of Nashville’s performing artists including Dierks Bentley with

Sam Bush, Lady Antebellum, Keith Urban, Sheryl Crow, Keb’ Mo’, CeCe Winans, Martina McBride and Will Hoge played to the sold-out crowd.

After thanking everyone for their continued support of Nashville, Urban made a joke about his musical instruments floating down the river to Smyrna but said, “We stay optimistic here in Middle Tennessee.” Then he led the crowd in a lively version of “Better Life” before he and wife Nicole Kidman crossed the street to the Nashville Convention Center to answer phones in the call center set up there.

“This town has been good to us,” said Urban, who also performed a version of the Beatles’ “Help.” “We had our little girl Sunday Rose here, and we are going over there to do our part.”

After a moving performance of her Top 5 song “Anyway,” McBride told a room full of media members that she and her three girls were going to do volunteer work in the coming days.

We escaped any kind of damage, but

there are kids at our daughters’ school who lost everything,” she said. “This happened in our city, and I want them to be connected to it. We are very proud to be Nashville. We love Nashville.”

Bentley apparently loves Nashville, too. He donated \$44,000 to the cause and after his performance with Bush, talked about pumping water out of his basement and then going over to the home of Lady Antebellum’s Charles Kelley to help him pump water, too.

“I wish I had taken a picture of that,” Bentley said.

Bentley did, however, post a photo on Twitter of himself cleaning water out of his own basement. The picture was the first evidence many people saw of the devastation that had hit Music City. Bentley said that if had known the photo was going to be so widely viewed he would have cleaned up a little more. “I looked like a drowned rat, which I kind of was,” he said.



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Your Property Location — Why Elevation Matters.



Our Home on Spy Glass Way—Elevation, 550 Feet Above Sea Level

By the afternoon of Sunday, May 2, 2010, when Old Hickory Lake reached its highest level at 451.45 feet above sea level, just a half foot from the water spilling over the gates of Old Hickory Dam; we sat confident in knowing that our home was at an elevation of 550 feet above sea level, a secure 100 feet above the highest water level in Hendersonville. While we empathized with the many victims of this most extraor-

dinary natural disaster, we were ourselves the beneficiaries of some careful research conducted five years earlier.

Recalling the flooding in New Jersey, in April 2005, when we began our home search here in June of that year, we made a special effort to anticipate just what a historic

rain event could

mean for our likely community. With that in mind, we spent the money to obtain topological maps of the Hendersonville area and studied carefully the elevation of various streams, creeks and bodies of water in the area. We also noted the elevation of property we were considering for purchase. Included in our

review was an examination of how, in an historic rain event, water would flow from the vicinity of our property to the outlets to the larger river.

Needles to say, our efforts at that time certainly were justified by our avoiding, what for many has been a great catastrophe. Moral: Always work with a realtor who has the “big picture.”



Our Community of Masters Glenn—High Above the River