

# the 2nd 500 year flood in 15 years

## The city they said would never flood

THE CEDAR RIVER HAS BEEN THREATENING to flood the city of Cedar Rapids, Iowa, as long as anyone can remember. Some years the river rose to record levels but earthen levees and flood walls kept the Cedar mostly within the banks of its tight S curve through the city.

At 9:20 a.m. on Wednesday, June 11, the National Weather Service reported that the Cedar River reached a record 20.01 feet in Cedar Rapids. The old record of 20 feet was reached in 1929, and thought to have also been reached in 1851. The weather service jumped its forecast for the Cedar Rapids crest expected on Friday from 22.1 feet to 24.5 feet, two feet below the projected “500-year flood” crest.

Cedar Rapids city officials expanded the mandatory evacuation area to match the 500-year flood map. Police officers stood in knee-deep water as they unsnarled backed-up traffic attempting to cross the First and Second Street bridges before they were closed or inundated. Railroad cars filled with rock ballast were parked atop a bridge just south of downtown to try to prevent the river from carrying the span away.

Thursday morning, the bridge lay toppled on its side, white water rushing over the girders. People could be seen dragging suitcases up closed highway exit ramps to escape the water.

One resident reported brown flood water lapping at the edge of her backyard at 11 a.m. and by 3:30 p.m. the basement was inundated and the pressure of the water had cracked the foundation.

By Thursday afternoon, the Cedar River was 29 feet deep, or 17 feet above flood stage. Brian Pierce, a meteorologist with the National Weather Service in Davenport, said, “We’re in uncharted territory — this is an event beyond what anybody could even imagine.”



An aerial photograph of a large industrial facility, likely a corn processing plant, that has been severely flooded. The facility consists of numerous white and blue buildings, silos, and complex piping systems. The surrounding area is inundated with dark, murky floodwater. A prominent white cylindrical tank is visible in the lower-left quadrant. A red banner with the text "ON LOCATION" is positioned in the upper right corner of the image.

ON LOCATION

At the Cargill corn processing plant spread out along the south side of the river, the floodwaters were rushing through the silos, bins and buildings, sweeping heavy equipment along with the surge.

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Finally, on Friday the 13th, the Cedar crested at Cedar Rapids at 31.12 feet, a stunning 11.12 feet of petroleum- and garbage-polluted water above the previous flood of record set in 1929 and 19.12 feet above flood stage. Most of downtown Cedar Rapids was underwater, including city hall and the county courthouse and jail, all built on an island in the middle of the river.

At the Cargill corn processing plant spread out along the south side of the river, the floodwaters were rushing through the silos, bins and buildings, sweeping heavy equipment along with the surge. By Sunday, the Cedar had receded five feet but it would be three more days before the river dropped enough so crews could begin pumping water, and another week before the river fell below flood stage.

With the Cargill corn milling facility closed, the company was forced to declare “force majeure” on corn syrup contracts. This means the company would not be able to meet all of its customers’ contract volumes, and supply of corn syrup would be limited until the situation was resolved. Resolving the situation started with mucking out the mess.

Cargill had seven or eight platform scales and a 72 ft x 10 ft rail scale about six feet underwater. They called Keith Elson, proprietor of Aaron Scale Systems, a Rice Lake customer since the days of Thomas & Johnson Scale Service. Keith recalls, “When the water receded, the state commissioner wouldn’t allow Cargill to repair the track scale. They had to replace it. And they needed it replaced quickly. They had tons of damaged corn fructose on the property that had to come out by rail cars, and the product had to be weighed for insurance purposes. They were working day and night.”

Keith Elson’s long association with Rice Lake began back in the Thomas & Johnson days when we were making large load cell stands and linkages.

Keith recalls, “Joe Grell was the first Rice Lake person who called on us. We started in a garage, just like Thomas & Johnson. My desk was a couple of planks over two file cabinets. We were a very small company but he treated us like a big company. We had a client list of lots of small co-ops, and we wanted to work with larger companies like ADM and Cargill, that ran 24 hours a day. I wanted a manufacturer that could satisfy all my needs. The more I associated with Rice Lake, the more I realized that this was the manufacturer for us. We’ve never had to



Jeff Merrell, feed house supervisor, (above, left) and Keith Elson, founder of Aaron Scales Systems.

Karen Hansen, truck scale specialist, AKA “Rocky” and “Truck Scale Goddess”.



At a corn sweeteners wet grind plant, the bulk weigh scale combines 35-foot and 60-foot scales on either side of a 20-foot pit to accommodate smaller trucks as well as belly-dumpers.

As soon as the water receded, Brice LaGrange, Keith’s grand-daughter’s husband, and his crew, installed two temporary SURVIVOR® pitless truck scales in 24 hours. The rail scale would take longer. Brice’s crew had plenty to do. “First we had to tear out parts of the old foundation. We used M4 concrete, which dries in twenty-four hours, for the new foundation components. It’s the concrete Iowa uses for bridges.”

Keith remembers the stress, “We had this high-power concrete in the mixer truck, and we had forty-five minutes before it started to set. Then the mixer truck ran into a huge traffic jam because there was only one bridge open. We had to go twenty miles out of the way to get to the Cargill site. But we made it.” ■

worry about shipment. Rice Lake always did what they said they would do.

“When Rice Lake introduced the 920i®, I knew this would solve all our problems. The forerunners didn’t have the flexibility of a 920i. Rice Lake held a 920i school in Chicago where anyone who attended could get a 50% discount on the 920i. We bought 27.

I’ll never forget the time we needed someone to help us demonstrate that 920i to some clients in Memphis, Tennessee. We called Rice Lake. It was a Monday, Joe’s first day back from vacation. He had a couple minutes’ notice and he was on his way to Tennessee. It turned out great.

“Karen Hansen is great too. She sends me these larger drawings so I don’t need a magnifying glass to read them. I call her ‘Rocky.’”



On June 15 at the Cargill soybean crushing plant upriver, flood-soaked soybeans blew a 20-foot hole in a concrete silo. The eruption of beans knocked over two railcars on a track nearby.

*The Gazette, Cedar Rapids, Iowa ©2008*

**What does the term “500-year flood” mean? Robert Holmes, USGS National Flood Specialist explains, “We hydrologists realize the term has instant public recognition and we use it to point to the extraordinary nature of such floods. However, the occurrence of a five-hundred-year flood doesn’t depend on what happened last year or fifteen years ago or one-hundred years ago. It’s based on the annual likelihood of the degree of flooding—in other words, the odds.”**

**A 500-year flooding event has a 0.2 percent chance—1 in 500—of happening in any given year in a particular location. A 100-year flood has a 1 percent chance—1 in 100—of occurring in any year in that location.**

6/13/2008 » 31.12 ft

Flood Stage » 22.00 ft

3/18/1929 » 20.00 ft

6/01/1851 » 20.00 ft

3/31/1961 » 19.66 ft

4/04/1993 » 19.27 ft

4/04/1933 » 18.60 ft

4/10/1965 » 18.51 ft

7/25/1999 » 18.31 ft

5/27/2004 » 18.30 ft

6/16/1947 » 18.23 ft

