

Crossroads

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Celebrating 100 years of Innovation

A look at
CRA's history

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SPECIAL
Anniversary Edition!

Disaster in **GOGEBIC COUNTY**



Lake Road Culvert #13 (Flink Creek) located 1.6 miles east of the Wisconsin state line. A 10' diameter multi-plate culvert is located in the 30' deep cavern of the crossing.

Recovering from a 1-in-1,000-year flood

The Monday of July 11, 2016, started out as a normal summer day. The afternoon **Gogebic County Road Commission** board meeting had wrapped up that sunny afternoon without event. The board was wrestling with the site location for its new garage, as well as other updates about the construction schedule for the summer. Manager **Darren Pionk**, PE, had gone home for the night when the predicted rainstorm moved in.

For the next four hours over 12 inches of rain fell on northern Gogebic County. A faster rate of rain than during Hurricane Katrina, Pionk later noted.

Calls began coming in from residents on Lake Road (County Road 505), which runs along Lake Superior, that parts of the road were washing out.

Gogebic's road foreman, **Scott Maki**, headed out toward Little Girl's Point, a scenic and popular county park along CR 505. Twenty minutes later Maki called Pionk and said, "You won't believe what's happening – we're losing the road." Maki had almost been swept out to Lake Superior, prompting Pionk to observe the damage himself.

Rain poured down, and as he neared CR 505 from the Wisconsin side Pionk saw water rushing over the top of the 24" tall guardrail. The land in this location slopes steeply down toward Lake Superior, with many ravines draining into the Great Lake.

Clearly, portions of scenic Lake Road – over an eight-mile stretch – were in jeopardy of washing away. Things quickly went from bad to worse.

Sheriff Pete Matonich, who was heading to the same location, called Pionk to determine the course of action for residents along the roadway. They planned to meet on higher ground on the roadway that connected to Wisconsin.

Pionk was following the sheriff when he noticed the patrol truck's lights disappear.

Jumping out of his truck in torrential rain, Pionk found Matonich's truck hood-down into a ravine after 30 feet of roadway caved

in. There was no movement in the pick-up for a few long moments.

Then Sheriff Matonich opened the passenger side door as water poured in around the cab of the truck. With the stream turning into a river that was surging out to Lake Superior, Pionk dropped down in the ravine and grabbed onto the sheriff's arm to help pull him to safety.

"I don't know how I did it," said Pionk, who puts his own weight at 180 pounds. "It's one of those things you don't think about. You just do." He helped pull the sheriff up onto the intact pavement. About 20 minutes later, the patrol truck was washed away downstream.

A new problem dawned on the two men – they were now marooned on a stretch of road and could not turn back. Most certainly there were other washed-out bridges and culverts in the road ahead. They had minimal cell service, no two-way radios, and were soaked by the torrential downpour.

They located an outbuilding and prepared to spend the night along with several other residents stranded in the area.

"The funny thing about this storm is there was no wind, no thunder or lightning and

Lake Superior wasn't particularly rough," Pionk said. "All the damage done was from the large volume of rain flowing off the mainland toward Lake Superior."

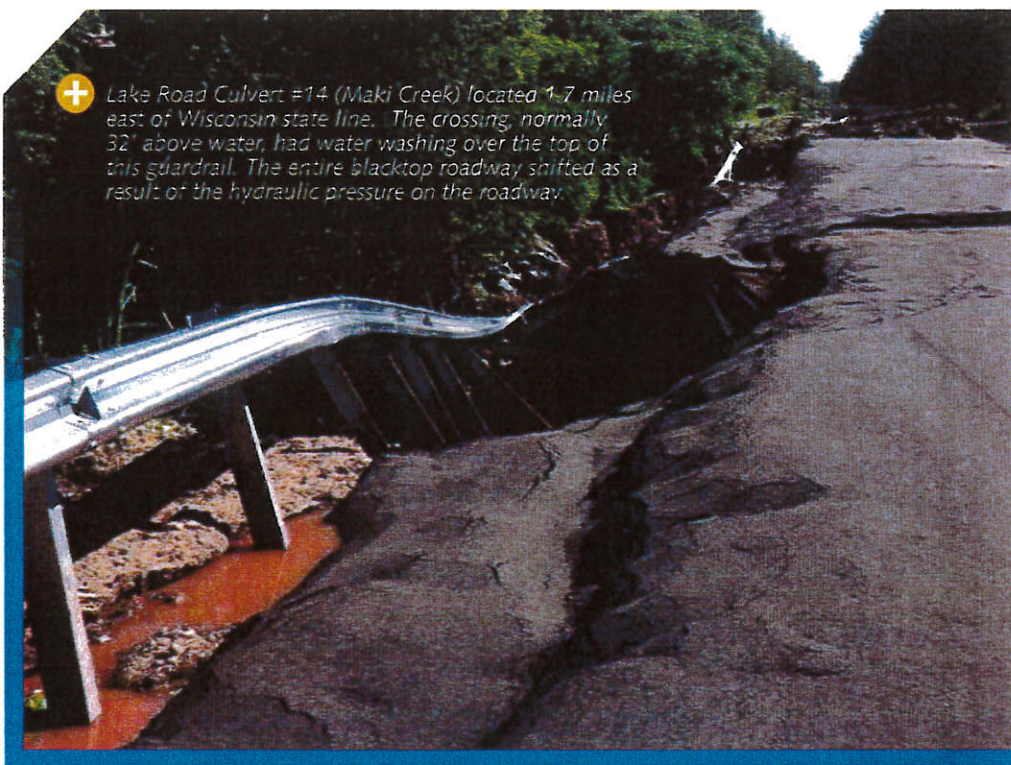
In eastern Gogebic County, another storm cell created a F-1 tornado that night.

Disaster declaration

Damage to the area, as it turns out, was substantial. There were 30 washed-out bridges and culverts along Lake Road and other local roads in the area. Access was shut off to the area, which serves 80-100 residents, many of them in year-round homes.

"We had one large, three-year-old culvert, which had been sized to handle a 500-year flood event washed out by this storm," Pionk said. "It was a rain of biblical proportions, for sure."

In another area, the centerline pavement of the road was visible half a football field down the creek heading to Lake Superior. Pionk said biologists from the Michigan Department of Environmental Quality were astonished by the size of sediment transported down the streams and deposited. Some sediment was the size of boulders. The intensity and duration of the storm exceeded the 1,000-year storm event.



+ Lake Road Culvert #14 (Maki Creek) located 1.7 miles east of Wisconsin state line. The crossing, normally 32" above water, had water washing over the top of this guardrail. The entire blacktop roadway shifted as a result of the hydraulic pressure on the roadway.

While the event didn't make much news in downstate Michigan, it captured the attention of Gov. Rick Snyder's office, which was asked to declare Gogebic County a disaster zone. This allowed the National Guard to come in and assist with rebuilding the transportation infrastructure.

Rebuilding before winter

Pionk was nearly overwhelmed by the volume of work needed to restore the road system. He worked endless days for the next several months.

Over 30,000 yards of stone and gravel were dumped into the chasms and breaks in CR 505 to make some parts drivable within a two-week period. The rural setting of the disaster area was a logistical nightmare as only one access road was available for crews, material and equipment.

Pionk knew that winter in the western UP can begin by mid-October. The nearly-20 compromised stream crossings that were making Lake Road passable in summer would never hold up to winter plowing along Lake Superior.

Pionk figured he had 12 weeks to gain cooperation from several government entities, numerous homeowners, take bids, receive materials and construct as many as 30 new culverts and bridges.

And then there was the matter of funding. "This was a \$5.5 million catastrophe for Gogebic County. Simply to repair this one road would take all our discretionary road spending for the next 10 years," Pionk said.

He immediately cancelled all work planned for the rest of the summer, and began preparing estimates of the work needed.

One of the first jobs was getting MDOT and the Federal Highway Administration to Gogebic County to walk the road first-hand and see the damage. Assessing the damage and preparing detailed estimates of each site was needed to see if Emergency Relief Funding would be accessible.

Although 30 bridges and culverts were irreparably damaged, in the end only 18 qualified for federal aid. The other culverts were not federal aid-eligible because they

were on the local road system and the damage to them didn't meet the threshold of FEMA (although Wisconsin counties were approved by FEMA for the same storm).

MDOT cooperation

Two factors really helped get the roads restored before winter – three, considering that soil-freezing temperatures held off until mid-November in 2016.

The first, was MDOT's willingness to allow a local bid – a very unusual situation. Pionk had identified qualified companies that had or could get the needed materials, equipment and manpower within a matter of weeks, allowing contractors to be working by early fall.

One other potential hang-up was the MDEQ permitting and Army Corp of Engineering requirements that needed permit issuance before the bids could be let.

"Permitting normally is a several-month process, but with the cooperation of MDEQ and the Corp, we received approvals for all culverts within a few weeks following their site visit," Pionk said.

In the end, all landowners granted easement permission, FHWA approved the projects, the state agencies came together to issue the permits in a timely fashion, and 10 CR 505 sites were constructed in a permanent manner.

By press time in April, Pionk was beginning to work on 10 more sites, mostly culvert replacements, with final paving and restoration of all sites by October. The repairs have been funded by an emergency loan from the State Infrastructure Bank (SIB), and are being reimbursed as the federal grant dollars are paid for work completed.

"I've never experienced anything like this in my career as a civil engineer, and I hope to never experience it again," Pionk said. "Nevertheless, it was a good exercise in pulling this community together and solving a crisis. 🚧"

+ Lake Road Culvert #27 located 4 miles east of Wisconsin State Line. Construction of new box culvert with 15 feet high wing walls. Property owner reluctant to sell additional easement to GCRC therefore retaining walls placed at the property line.

