

Drinking Water Woes Complicate Matthew Cleanup

NORTH CAROLINA HEALTH NEWS

OCTOBER 14, 2016 by [CATHERINE CLABBY](#) in [ENVIRONMENTAL HEALTH](#), [FEATURED](#), [PUBLIC HEALTH](#), [RURAL HEALTH](#)

Damaging flood waters steal so many things, including the reliable drinking water supplies people usually take for granted.

By Catherine Clabby

If the floodwater would get out of his way, Rob Armstrong could get on with the job of restoring drinking water to the battered city of Lumberton. But that is going to take time.



Public Works Commission.

Water utility managers further east expressed fear of situations such as this one in Smithfield, where water mains running underneath roads fail in the wake of flooding. Photo credit: Heather Parker Shortt/ Facebook

“We’ve got four feet of water over our only treatment plant. It’s damaged quite severely at this point,” the city’s public works director said Thursday.

Not only is the power grid down in the Robeson County city, so is a drowned back-up generator at the plant. Equipment used to sanitize drinking water and extract sediment is very likely damaged too. No one knows how many busted water pipes are waiting to be discovered in a system 20,000 people are sorely missing right now.

It’s the cruelest of ironies. When floods deluge towns and cities they frequently disrupt public drinking water supplies. So it’s been in Eastern North Carolina where Hurricane Matthew’s rains have raised multiple waterways to record-breaking levels in the Neuse, Cape Fear and Lumber River basins.

More than 30 water systems, in flood-stricken zones in eastern counties as of Thursday (down from 40-plus on Wednesday) were recommending that customers boil their tap water. Water system managers do that when bacteriological contamination may have breached a water supply until testing can confirm the water is safe.

Floods raise that risk because rushing water is muscular enough to damage underground water pipes, potentially exposing drinking water to pathogens and other contaminants. “In a lot places, roads got washed out. We run water lines adjacent to those roads and bridges,” said Chad Ham, the Environmental Programs Manager at Fayetteville

Water systems don’t always know when or where a length of pipe is broken during a flood. But the loss of water pressure is an alarm bell.

Under pressure

Pressure problems started in Fayetteville’s network of water pipes on Saturday night, while Hurricane Matthew was still pelting Eastern North Carolina with heavy rain. “In parts of the systems where elevations are higher, we could not maintain sufficient pressure. It got very low and in some cases there was none at all,” Ham said.

In addition to the system’s boil-water advisory, Mayor Nat Robertson declared a “water shortage crisis” in Fayetteville. That required citizens to use water only for essential needs, such as drinking water for themselves and their animals, minimal cleaning, medical care, firefighting and other necessities.

Finding and sealing off a broken 22-inch mainline pipe on Sunday helped the situation. By the next day, public works crews had found others, shut them down, and could start restoring pressure.

Next crews flushed the water lines, pumping up the pressure higher than normal to expel, at fire hydrants, any solids that may have contaminated the system. Then testing could begin, at 14 preselected locations. By Wednesday lab results showed adequate levels of sanitizing chemicals and no unwelcome bacteria.

Given the high volume of water in the Cape Fear basin, Ham said leaders of his system are not concerned that they'll pull drinking water supplies from the Cape Fear River contaminated by agricultural or other wastes. If that sort of trouble does strike, the water can draw from Glenville Lake, its second water source.

Lethal floods

As of Thursday afternoon, the state Department of Public Safety said 22 people in North Carolina had died due to Hurricane Matthew. In advice about how to keep safe where flooding strikes, departmental leaders recommend people

not drink well water from land that flooded until it's deemed safe.



A fuel station in Lumberton inundated by rainwater deposited by Matthew. Many substances get into flood waters: soil, human and animal waste, chemicals and fuel create a toxic mix in floodwaters. Now that dozens of water treatment plants have been exposed to contaminants, it could take weeks for water in some Down East communities to be drinkable.

Jocelyn Augustino/FEMA

In Lumberton, water supply may not be restored for weeks, a situation that the local

hospital, Southeastern Regional, and individuals have been scrambling to cope with for days. On Thursday, volunteers were still carrying bottled water to people trapped in neighborhoods cut off by high water, said Linda Oxendine, Lumberton's director of public services.

But Armstrong, Lumberton's public works director, has a plan to move things as quickly as possible. With help from the U.S. Army Corps of Engineers and Federal Emergency Management Agency (FEMA), the city intends to use more than a dozen rented and otherwise procured pumps to clear flood water from the plant. That may take seven to 10 days.

Armstrong said he is not confident the intake that normally draws water from the Lumber River into the system will be functional. So his team will instead draw water from wells they usually use to dilute the river water.

A new generator should be running by the time it's needed. But equipment repairs could take more time. If so, staff can always add sanitizing chemicals to the water by hand.

"We've got two things going for us. Most of our chemicals are okay and vendors are bringing more. And the well water we intend to use is easier to treat. It doesn't have as much organics in it," he said.

As sections of the water system come online, the Lumberton water system staff will start shipping water to homes and businesses, with a boil-water advisory intact. Then they'll follow the same flush and test steps Fayetteville took to ensure clear and safe drinking water.

In two to four days, Armstrong said, with audible hope, the operation may approach "some semblance of normalcy."

QUESTIONS

1. Why does the author in paragraph 4 call the flooding of towns and cities the “cruellest of ironies”?
2. What are 3 effects of flooding from a hurricane, and how do they affect drinking water supply?
3. What does the author mean by the word “muscular” in paragraph 6?
4. Is the second image an example of point or nonpoint source pollution? Why?
5. What does the article recommend people do in order to be safe before drinking contaminated water supplies?
6. How do city officials go about restoring water supplies?