



Stelton has made upgrades to its water system in the last year, but will face several double-digit rate increases in order to offset debt and a looming \$14 million upgrade to its treatment plant, built in 1973, that will be necessary within a decade. Dan Gleiter, PennLive

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dollars. Even the well-publicized public health crisis in Flint, Michigan, has receded from public consciousness as the problems there continue.

This spring, the department has hired 11 of a planned 17 new trainees to bolster inspections in the years to come. Environmental Secretary Patrick McDonnell said the new hires will likely be out in the field sometime in 2019. A trainee generally wouldn't be considered a sanitarian who could be assigned to a municipal system until after two years.

On the larger question of DEP funding, he's doubtful the agency will ever return to pre-2009 staffing levels. Instead, the DEP has turned increasingly to fees to sustain its operations, including a still-pending proposal to raise \$7.5 million off water systems.

In all of this, McDonnell recalls something he was told earlier in his career.

"Drinking water is the one utility we ingest," he said. "It's incredibly important from a public health perspective to have oversight — and adequate oversight."

In the meantime, the state actually saw its number of fully trained inspectors decrease since the EPA's 2016 warning, according to the most recent update between the DEP and the EPA.

Inspectors visited only about 19 percent of the state's water systems last year, according to EPA data, well below the national average of 37 percent. Short staffing also resulted in a spike of violations that were never resolved — from 4,298 in 2009 to 7,922 in 2015.

"The numbers don't lie," one former inspector said. "They tell you what I've been dealing with. I was the little Dutch boy with his fingers in the dam. And I only have 10 fingers."

### ONE SIZE DOESN'T FIT ALL

Drinking water systems come in all shapes and sizes.

There's the sprawling Pittsburgh Water and Sewer Authority with 520,000 customers and little Beaver Brook, an old Luzerne County coal-mining village of about 200

There are 364 Sheetz, 160 Wawas and 25 McDonald's with their own systems.

"If you know one water system, you know one water system," one former inspector said. "They're all a little bit different, so they've all got different problems."

That's what makes the gutting of oversight over the last decade so troubling.

Pittsburgh struggles to maintain a vast network of reservoirs, pumps and pipes — at least a quarter of which contain toxic lead — that dates to the 19th century. The residents of Beaver Brook, none of whom are trained operators, are responsible for their own testing and live in fear of a burst pipe that could cost tens of thousands of dollars.

Schools can be problematic because they sit vacant for months at a time, allowing contaminants to stagnate in old pipes. A test in August could show elevated lead levels, for example, that would be nearly undetectable a few days into the semester.

Gas stations and restaurants in rural areas typically operate their own water systems, meaning your iced mocha or 64-ounce soft drink is only as safe as the local water supply.

When a new business takes over an existing private well — there were 53 of these in 2017 — the owners may suddenly find themselves under the purview of the DEP and more stringent rules for well construction and water treatment.

Municipal systems have been the source of major violations and even fraud committed by their operators.

Stelton's former chief operator, for example, was sentenced to a year of probation and paid \$4,460 in fines for tampering with public records when an inspector found discrepancies between a sensor at the plant and submitted treatment reports for several months in 2013.

The DEP also found that the plant failed to adequately treat for giardia, a parasite that can cause diarrhea and other ailments, as well as elevated levels of trihalomethanes, byproducts of chlorine treatment linked to increased cancer risk.

Given its history and proximity to heavy industrial activity, Stelton is among the most scrutinized water systems in the state. Short staffing at the DEP means that many other

systems don't receive nearly as much attention. In the current cash-starved climate, current and former inspectors say it's likely that other instances of fraud, improper treatment and waterborne illnesses go unnoticed.

"You look at some of the bigger systems and the problems they have," the former inspector said, "and you wonder what's going on down the road at the little guys."

That sentiment was echoed by Marc Edwards, the Virginia Tech engineering professor who helped blow the whistle on the Flint water crisis. He has also been involved in addressing Pittsburgh's water woes.

"When you cut the number of inspectors back, what do you expect to happen?" Edwards said. "If suddenly no one's getting speeding tickets, why are you surprised when traffic deaths go up?"

It can be incredibly difficult to draw a straight line between water treatment issues at a specific plant and related health impacts. The symptoms of exposure to lead and various carcinogens, for example, may not become apparent for years or decades. Even more fast-acting contaminants, such as E.coli and giardia, can be difficult to trace to a single source — particularly if the person was sickened at a campground, restaurant or some other transient water system.

"By the time you get sick, you've moved on from that transient system," one inspector said. "It could be food poisoning, the common cold or whatever. No one ever knows."

That factor, when combined with budget cuts at the DEP and related agencies such as the Department of Health, may explain why Pennsylvania reports so few outbreaks of waterborne illness.

All but one of the 10 outbreaks reported to the CDC between 2009 and 2014 was linked to the bacteria that cause Legionnaires' disease, a deadly form of pneumonia. Seven of the 10 were at hospitals or nursing homes, where such an outbreak is more likely to be observed and reported.

In practice, short staffing means inspectors engage in triage, meaning that systems at the greatest risk receive the most attention.

Lisa Daniels, who began her career as a York-area drinking water inspector in 1989 and now leads the state inspection program, said that's the way the division has always

operated.

Each year, she said, every regional office ranks systems based on factors such as operator certification, past violations and the severity of those violations. For example, a violation that directly impacted water quality would raise a red flag whereas a reporting violation may not.

"All of our systems are ranked within the region as they're planning their inspections," she said. "In a year, if they know they can't get to all of their facilities, they take the ones which are the highest priority ranking where there's the greatest risk."

The DEP does not believe the public has a right to see that list.

"Some of the information," Daniels said, "could be considered sensitive information if we're pointing out potential vulnerabilities."

### 'YOU GET LESS WITH LESS'

The DEP became a popular target of budget cuts in the past decade for an increasingly pro-business, anti-regulation General Assembly. Between 2008 and 2012, state funding for the agency nearly halved from \$229 million to \$125 million. In recent years, that figure crept upward again to \$148 million. Had the agency's 2008 budget kept pace with inflation, however, it would now be \$271 million.

"You don't do more with less," said one inspector. "You don't get more training. You don't do more sanitary surveys. You don't do more enforcement. All you get is less with less."

Red-tape averse Republican lawmakers often pointed to onerous regulation and a slow permitting process, particularly when it came to DEP oversight of natural gas drillers during the recent Marcellus Shale boom.

Cuts designed to lift roadblocks to industry growth affected all of the agency's programs, including drinking water. They also proved counterproductive, slowing the pace of approvals for everything from gas wells to residential construction.

"You need to do a more thoughtful review of this stuff rather than taking a meat ax to it—you need to identify what's wrong and put resources into fixing it," said David Hess, who served as environmental secretary under Republican Gov. Tom Ridge. The solutions, Hess said, "don't fit on a bumper

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