USA TODAY August 19, 2002

Sewage pouring into lakes, streams

By Tom Vanden Brook, USA TODAY

SSO 700 is an unremarkable spot. Just a pipe, hidden by trees and brush, emptying into Mill Creek near downtown Cincinnati. "It just gushes, even in dry weather," says Mike Fremont, president of the Ohio environmental group Rivers Unlimited. "If you know what it is, you keep your distance."

What it is, is human waste — hundreds of gallons of it at a time flowing untreated from toilets into the creek. Sanitary Sewer Overflow 700 is not only disgusting, it is illegal. But the city won't shut it off because plugging SSO 700 and more than 100 pipes like it all over Cincinnati would require raising sewer rates about 1,500%. "It would bankrupt us," says Patrick Karney, director of the Metropolitan Sewer District of Greater Cincinnati. "It would be, last one out, turn out the lights. Cincinnati would just be another wide spot on I-75."

Dozens of cities like Cincinnati, some with sewer pipes laid in the 1800s, are dumping raw human waste into streams and lakes. The practice is generally illegal under the 1972 Clean Water Act. Yet it continues an estimated 40,000 times every year because cities balk at the enormous expense of modernizing and expanding their sewage systems.

But if taking care of the problem is costly, so, too, is doing nothing, environmental activists say. Raw sewage in the water is a primary factor in the sickening of 1 million people a year, according to the Centers for Disease Control and Prevention. It poisons shellfish, closes beaches and endangers supplies of drinking water.

"Raw sewage is a health concern," says Mike Cook, director of wastewater management for the Environmental Protection Agency. "Beach contamination is a concern. Human exposure to harmful microorganisms is a concern." After decades of threats and fines, federal authorities are cracking down:

In Baltimore, city officials agreed to pay a $600,000 fine and spend $940 million over 14 years to upgrade its sewer system. Since 1996, Baltimore dumped at least 100 million gallons of untreated waste into its waters. Some of the sewage spewed into tributaries of the Chesapeake Bay, one of the nation's top sources of shellfish.

In Baton Rouge, local officials plan to spend as much as $461 million to improve their sewer system to avoid dumping 1.2 billion gallons of untreated waste each year into the Mississippi River.

In Greenwich, Conn., a million gallons of inadequately treated sewage has been dumped into local waters, according to the EPA. Local officials agreed in January to pay a $285,000 fine and upgrade the sewage treatment system.
The Justice Department and the EPA have taken other cities to court over sewer problems, including Atlanta, Birmingham, Ala., Honolulu, Los Angeles and Miami. Regulators expect to be done this fall crafting proposed regulations requiring all sewage treatment facilities in the country to improve their systems and notify the community where overflows occur.

But the proposal will then face another hurdle: It must be submitted to the White House Office of Management and Budget. The office reviews such rules to determine their costs and benefits as well as the science that backs them, says Trent Duffy, a spokesman for the office.

The office has 90 days to pass judgment on proposed rules and has not hesitated to send rules back to agencies for changes. From July 2001 to March 2002, it returned for reconsideration more than 20 rules, more than the total returned during the entire Clinton administration.
Environmentalists say the government has already taken too long to fix the problem.
"We urge you to put the interests of the American public first and to move forward with rules that will at least warn our citizens before they take a dip in fecal-contaminated waters," stated a recent letter from 11 environmental groups to the EPA.

The groups called on the EPA to immediately adopt rules proposed by a federal advisory committee in 1999 that would require monitoring for sewer overflows and reporting them to public health authorities.

But not everybody says new rules are the answer. Ken Kirk, executive director of the Association of Metropolitan Sewerage Agencies, says the Clean Water Act fails to consider the limits of engineering. "There is no way to design sanitary sewers to accommodate a zero-tolerance policy. Period," Kirk says.

In some cities, including Baltimore and Baton Rouge, pipes may be 100 years old or older. They break and crack, releasing waste, or become clogged by tree roots. Often the pipes are too small to handle the growth in city populations.
Sanitary sewer overflows (SSOs) typically occur when rainwater seeps into broken sewer pipes and fills them past capacity. Treatment plants can't handle the rush of water and sewage, so overflow valves like SSO 700 in Cincinnati open up and let the disease-carrying waste spill out. Some overflows are inevitable, Cook says. Heavy rainfall can overwhelm even well designed and maintained systems. But the numbers today indicate that sewage planners have not kept up with population growth.

"It could be that sewer capacity is exceeded by population growth," Cook says. "In some cases, they've hooked up more people than the system can handle."
The health effects of this lack of planning are significant.

Bacteria, viruses and parasites, common in human waste, can infect shellfish, swimmers and drinking water. They cause diseases such as cholera, hepatitis and meningitis. Contamination of this kind is estimated to kill 900 people and sicken nearly 1 million every year, the CDC says.
Not all of these cases can be traced directly to sewage. Animal waste contains dangerous microorganisms, too. But most environmentalists argue that human waste is the greatest danger to people.

"Trouble is, the same virus can have very different symptoms," says Chuck Gerba, a University of Arizona professor of microbiology. "I may get a rash, you may get a fever, another guy may get a cold. Good old ankle-grabbing diarrhea is common, too."
Getting a handle on the problem is a challenge.
One study found that as many as 1,400 cases of illness from contaminated shellfish go unreported each year. Last year, a survey by the EPA of about 2,400 beaches showed that more than 600 issued swimming advisories or closed because of poor water quality. Most often, actions were taken because of high levels of dangerous bacteria in the water. Most often, local officials said the source was unknown. In 2% of the cases, local officials attributed actions to sanitary sewer overflows. But environmentalists dispute that. They say the percentage is probably much higher.
"This is a problem that's getting worse and isn't being properly addressed," says Nancy Stoner, director of the clean water project for the Natural Resources Defense Council, an environmental advocacy group. "Sewage overflows occur in every city. These pipes are out of sight, out of mind."

Representatives of treatment plant operators contend that heavy rain or melted snow make sewer overflows a part of life. They say trying to eliminate overflows entirely would cost ratepayers billions of dollars and make negligible improvements in water quality.

Better maintenance of sewers and eliminating the worst overflow sites should be the thrust of any new EPA rule, says Greg Schaner, director of governmental affairs for the Association of Metropolitan Sewerage Agencies. The group represents 300 treatment plants. Communities facing bills to fix faulty sewers at an estimated cost of perhaps $10 billion a year in total say zero tolerance will bankrupt them. And they say it's unfair to expect city residents — many in poor neighborhoods — to pay the whole bill.

"There should be some cost sharing with the federal government," Baltimore Mayor Martin O'Malley says. "A clean bay is a great goal, but the manner in which they're forcing us to pay for it is totally unfair and not right."

Under pressure from the EPA, Cincinnati's sewer district has agreed to spend $43 million to eliminate 17 of its worst overflows. The deal will keep 100 million gallons of raw sewage from being dumped into waterways each year.

Plugging all of Cincinnati's estimated 100 SSOs could cost $3.6 billion, Karney says. Even if he had 15 years to do it, ratepayers would still see annual bills jump from $320 to $5,100 based on the average bill for winter water usage. That's an increase of almost 1,500%.

"These Johnny-come-lately regulations weren't anticipated in the 1800s when these systems were built," he says. "There was no eye to the environment in those days. You can't miraculously redo 3,000 miles of sewer. It takes time."

Overflows by the numbers

The Environmental Protection Agency says the number of sanitary sewer overflows each year nationwide is unknown. In some areas, overflows might not be reported or are underreported to the EPA and state environmental agencies. Even so, there are some estimates:

- The EPA says there are at least 40,000 sanitary sewer overflows each year. That figure does not include sewer backups in basements.
- An EPA survey last year of 2,445 beaches in the USA found that 672, or 27%, issued advisories or closed at least once because of bad water quality.
- Elevated bacteria levels were responsible for 87% of the closings or advisories. More than half of the incidents had an unknown cause. Survey respondents said sanitary sewer overflows were to blame in 2% of the cases. Other sewer and septic problems accounted for 11% of the cases.
- A survey of 79 members of the Association of Metropolitan Sewerage Agencies in 1994, the latest data available, showed that 65% of the respondents reported overflows during wet weather. They reported that as much as 35% of their sewers were filled above capacity and/or overflowed during wet weather.
- The EPA estimates it would cost as much as $10 billion per year to add capacity, repair and renovate. The agency says the nation's sewer infrastructure is worth $2 trillion.
- The environmental group Sierra Club estimates it costs homeowners $600 million each year to clean basements fouled by backed-up sewers.