



N.Y. / REGION

Sewage Flows After Storm Expose Flaws in System

By MICHAEL SCHWIRTZ NOV. 29, 2012

EAST ROCKAWAY, N.Y. — The water flowing out of the Bay Park sewage plant here in Nassau County is a greenish-gray soup of partially treated human waste, a sign of an environmental and public health disaster that officials say will be one of the most enduring and expensive effects of Hurricane Sandy.

In the month since the storm, hundreds of millions of gallons of raw and partly raw sewage from Bay Park and other crippled treatment plants have flowed into waterways in New York and New Jersey, exposing flaws in the region's wastewater infrastructure that could take several years and billions of dollars to fix. In New York State alone, Gov. Andrew M. Cuomo has estimated that about \$1.1 billion will be needed to repair treatment plants. But officials acknowledge that they will have to do far more.

Motors and electrical equipment must be raised above newly established flood levels, and circuitry must be made waterproof. Dams and levees may have to be built at some treatment plants to keep the rising waters at bay, experts say.

Failure to do so, according to experts, could leave large swaths of the population vulnerable to public health and environmental hazards in future storms.

“You’re looking at significant expenditures of money to make the plants more secure,” said John Cameron, an engineer who specializes in wastewater-treatment facilities and is the chairman of the Long Island Regional Planning Council. “There is no Band-Aid for this,” he added. “This is the new normal.”

When the plants are fully functioning, they treat incoming sewage to remove solid waste and toxic substances and kill bacteria before it is discharged into the ocean or a bay. When the plants are shut down, the raw sewage goes into waterways in the same condition as when it comes in. At least six sewage plants in the New York region shut down completely during the storm, and many more were crippled by storm surges that swamped motors and caused short circuits in electrical equipment.

In New Jersey, workers at the Passaic Valley Sewerage Commission plant, the fifth largest in the country, had to evacuate as floodwaters surged in and wastewater gushed out.

The Middlesex County Utility Authority plant in Sayreville, N.J., let about 75 million gallons of raw sewage a day flow into Raritan Bay for nearly a week before power was restored, said Larry Ragonese, a spokesman for the State Environmental Protection Department.

Operations at both plants have not yet been fully restored.

The damage to the plants did not cause contamination to drinking water, which is run through separate systems, officials said. In some areas, officials imposed restrictions on water use to reduce strains on plants.

Bay Park, a sprawling complex off Hewlett Bay near the New York City border, serves 40 percent of Nassau County.

When the storm arrived, its force blindsided workers. They had spent days shoring up the plant with emergency measures, but did not anticipate the surge.

In less than 30 minutes, engines for the plant's main pumping system were under 12 feet of water, and sewage began to back up and overflow into low-lying homes. In one low-lying neighborhood, a plume of feces and wastewater burst through the street like a geyser.

The plant shut down for more than 50 hours, and about 200 million gallons of raw sewage flowed into channels and waterways.

"Never, ever, ever has this happened before," said Michael Martino, a spokesman for the Nassau County Department of Public Works. On Thursday, Mr. Martino said that the plant was back in operation and that the treatment of sewage was improving day by day.

Two other plants on the South Shore of Long Island, in Lawrence and Long Beach, were knocked out of service by the surge. Both are now working. And the Rockaway Wastewater Treatment Plant in Queens had significant damage.

Others, including the Cedar Creek Water Pollution Control Plant, which serves another 40 percent of Nassau County, and Bergen Point, another large plant in Suffolk County, escaped relatively unscathed.

Still, even those plants may not fare so well in the future, said Mr. Cameron of the Long Island Regional Planning Council.

Almost all facilities in the region are close to sea level and are vulnerable to storm surges, he said. Many were built decades ago to serve fewer people.

Even before the storm, the Bay Park plant in Nassau County needed new equipment.

When it was completed, in 1949, the county's population was half what it is today. The plant now serves 550,000 residents and has struggled to keep up with demand.

During heavy rains, there are occasional sewage leaks, particularly in low-lying areas, residents say. Last year, the county was fined \$1.5 million for, among other violations, illegally pumping about 3.5 million gallons of partially treated sewage into East Rockaway Channel. Edward P. Mangano, the Nassau County executive, has invested \$70 million to improve the sewage system, but officials said damage from the storm was a major setback.

For the residents of Barnes Avenue in Baldwin, a low-lying stretch about three miles from the Bay Park plant, the failure during the hurricane was the culmination of their worst fears, though hardly a surprise.

They said they had long complained to Nassau County about sewage that flooded streets and occasionally homes during heavy rains. After Tropical Storm Irene sent human waste splashing onto lawns and front porches last year, residents said, the county bolted manhole covers shut to prevent them from opening.

During the storm, the manhole covers stayed in place, but the force of wastewater rushing up through the ground around them washed away part of the road.

“With Sandy it was, I hate the cliché, the perfect storm,” said John Malinowski, 54, a graphic designer who lives with his wife in a two-story home on Barnes Avenue. “When Bay Park failed and they couldn't get the sewage out of the system, that's when this became a real catastrophic event here.”

The smell of excrement still hung over the tidy neighborhood this week as workers in white hazmat suits tried to decontaminate homes. Sewage, mixed with four- to five-foot-high floodwaters, infiltrated floors and walls, and many homes must be stripped to their wooden frames to be fully decontaminated.

Residents said they were unsure whether their homes could be salvaged, or even whether they were safe to enter. If allowed to remain in walls and between floorboards, raw sewage can breed diseases like salmonella, hepatitis A and giardia, said Vince Radke, a sanitarian at the Centers For Disease Control and Prevention. He said contaminated items, including drywall and insulation, as well as furniture, should be thrown out.

Residents of Barnes Avenue said they had encountered difficulty getting aid.

“We started e-mailing and phoning everyone in the Town of Hempstead, the County of Nassau, the State of New York and at the federal level to try to get people down here to say is this healthy or is this not healthy and here’s what do about it,” said Jeff Press, 42, a photographer, whose home has not yet dried out.

Mr. Martino, from the Department of Public Works, said Nassau County had been “very aggressive” in informing residents of the dangers.

He said that Mr. Mangano, the county executive, had put in place a plan to clean up the damage in private homes caused by the sewage, and that the county was sending out crews to assist.

He said county officials had gone door to door to inform residents of the program and provide health information.

Elsewhere, officials are still evaluating the environmental impact of leakages.

In Raritan Bay, the Hudson River and the waters around the Bay Park plant, the Environmental Protection Agency has detected dangerous levels of fecal coliform, a bacteria associated with human waste, and has urged people to avoid contact with the water. Bans on shellfish have been imposed in some regions.

The tides will eventually flush much of the wastewater into the Atlantic Ocean, where it will break down. There is concern, though, that some contamination could go into the sediment and be buried, particularly around Bay Park, where the waters are flushed out more slowly.

“This is the largest sewage release in the history of Long Island,” said Adrienne Esposito, executive director of **Citizens Campaign for the Environment**, an advocacy group. “This brings to a new level the public health threat and the duration for the contamination, which will have a serious adverse impact on our beaches and our bays.”

A version of this article appears in print on November 30, 2012, on page A1 of the New York edition with the headline: Waste Flows After Storm Expose Costly Defects in Sewage System.