



\$800M sought for upgrades to Passaic Valley wastewater plant

TUESDAY, JULY 9, 2013 LAST UPDATED: TUESDAY JULY 9, 2013, 3:03 PM

BY JAMES M. O'NEILL
STAFF WRITER
THE RECORD

The state's largest sewage treatment facility has asked for nearly \$800 million in federal grants to pay for upgrades after the plant was crippled by Superstorm Sandy and millions of gallons of raw sewage spilled into the [Passaic River](#).

To protect the facility from future storms, the [Passaic Valley](#) Sewerage Commission wants to move crucial equipment to higher ground and build a flood wall around the perimeter of its 140-acre campus in Newark. The commission also wants to install its own power generation plant so it doesn't have to rely on PSE&G.

The request by the fifth-largest sewage treatment facility in the nation comes as agencies throughout the state are weighing their options for making similar facilities more resistant to storm related damage.

"Everyone is thinking about resiliency and hardening their assets, though not on the scale of [Passaic Valley](#)," said Peggy Gallos, executive director of the Association of Environmental Authorities of New Jersey, which represents sewer and drinking water authorities. "There's been a lot of discussion about what that would entail."

Sewage treatment facilities are inherently more vulnerable to storm-related flooding because they are often located in low-lying wetlands to take advantage of gravity that helps maintain flow through sewer lines. They also need to discharge their treated effluent into a nearby river or bay.

The [Passaic Valley](#) Sewerage Commission handles wastewater treatment for nearly 1.5 million residents in towns along the river in Bergen and [Passaic](#) counties as well as the city of Newark – about 25 percent of all of the state's sewage.

The plant was originally constructed along Newark Bay in 1924 – long before there was concern or discussion about climate change, sea level rise and storm surges. The most recent improvements to the facility took place in the late 1970s, to add a second stage of treatment that was prompted by federal water quality regulations. While the agency allocates some of its revenue for regular maintenance issues, it is now faced with a major overhaul to handle a sea rise that once seemed decades away.

When Sandy struck last October, it pushed a five-foot surge of water across the treatment facility's low-lying campus at the edge of Newark Bay. The saltwater flooded a network of tunnels and equipment and knocked out power and backup emergency generators. Raw sewage backed up in the lines, and for several days 840 million gallons flowed untreated into the [Passaic](#). Over the next three weeks, as the facility was brought back into service, an estimated 4.4 billion gallons of partially treated sewage entered New York Harbor.

Raw sewage can cause illnesses such as gastroenteritis – a stomach inflammation that causes vomiting and diarrhea – as well as hepatitis and skin, respiratory and ear infections. The sewage can also inflict economic damage, such as lost revenue from beach closures, fish kills and closed shellfish beds.

Power needs

“PVSC is in the process of recovering from the devastating effects of Superstorm Sandy. Part of that recovery will include upgrading our facility and rebuilding our infrastructure, which will reduce the risks of flood damage,” said Michael DeFrancisci, the commission's executive director. “Our goal is to get ahead of the problem – proactively – and do so in a way that's smarter and more resilient to the effects of extreme and violent weather.”

The need to decide on major projects comes at a time when eight of [Passaic Valley's](#) nine board of commissioners slots are vacant.

[Governor Christie](#) forced the resignation of six sitting commissioners in 2011 and declared a state of emergency at the agency, which he had said was rife with patronage and corruption. Christie's executive order left day-to-day operational decisions in the hands of [Wayne J. Forrest](#), whom Christie put in charge. DeFrancisci, a former [Little Falls](#) mayor, took over last summer.

Among the projects the agency is proposing is a \$65 million onsite power generating facility to provide power and steam generation, eliminating the need to rely on PSE&G. During Sandy, the Newark plant lost all power for nearly three days, so it could not operate or pump floodwaters out of the facility.

If it can't build its own power plant, [Passaic Valley](#) has asked for \$45 million to buy backup generators to operate strategic pieces of equipment should the facility lose power from PSE&G. These would include generators for the pumps that keep sewage flowing into the plant and treated effluent out of the plant, as well as sump pumps to remove floodwater.

The agency also wants to build a flood wall around the perimeter of the treatment facility, with flood gates at the facility entrances. That project is estimated to cost \$83 million.

The most expensive project would be the construction of a \$526 million biosolids treatment facility at higher elevation than its current facility.

Biosolids are the byproduct of treating sewage – the semisolid or solid sludge that gets removed from the liquid during the treatment process. The facility would have equipment to remove remaining water from the solids, as well as driers to produce an end product that could be reused for fertilizer. Besides providing wastewater treatment for New Jersey towns, the agency handles biosolids or sewage sludge produced at other facilities. For instance, it handles about 11 percent of New York City's sewage sludge, which gets transported across the bay by ship.

The request for large grants for upgrades is necessary because [Passaic Valley](#) has not been charging its customers more in anticipation of major capital projects. The user fees that [Passaic Valley](#) charges its 48 municipalities generate about 80 percent of the revenue needed to cover the sewerage agency's annual \$160 million operating budget. The operating budget has only minor allocations – about \$1.2 million – for construction projects, principally maintenance work on the existing equipment, officials said.

In January, the commission received nearly \$15 million in Sandy grant money from the Federal Emergency Management Agency to cover the cost of interim repairs as well as the cost of shipping untreated sludge to other facilities while [Passaic Valley](#)'s system was down.

Selection process

To pay for its proposed upgrades, [Passaic Valley](#) has asked for federal hazard mitigation grants through FEMA. The application process can take up to two years, DiFrancisci said. “The projects may be spread out over a longer time as funding becomes available,” he added.

Federal mitigation grant requests are reviewed and selected by the state Office of Emergency Management, based on state priorities, cost effectiveness, disaster impact and other criteria, said FEMA spokesman Christopher McKniff. Once projects are selected by the state, they are forwarded to the FEMA regional office and reviewed to ensure they comply with federal regulations. The hazard mitigation grant program may provide a state with up to 15 percent of the total disaster grants awarded by FEMA for Sandy-related costs. The total amount that would be available is still being determined, McKniff said.

Last month, the federal Environmental Protection Agency announced it was giving New Jersey \$229 million in low-interest loans and grants to make treatment facilities – both sewage and drinking water – more resilient. DiFrancisci said that [Passaic Valley](#) “will be pursuing this program and all viable avenues for funding assistance.”

Gallos, of the Association of Environmental Authorities, said the destruction from Sandy highlighted several key issues for the state’s sewer and drinking water authorities. Chief among them is the vulnerability of pump stations that are part of these systems. The Middlesex County Utilities Authority lost two large pumping stations, for instance, and the South Monmouth Regional Sewerage Authority was also badly damaged, Gallos said.

Generally, sewer authorities have a number of emergency generators to keep pumps running when they lose power. But because the power outages were so widespread after Sandy, the agencies didn’t have enough generators to keep all of their pumps operating. And those that did have generators ran out of diesel fuel because the power outages lasted for so long.