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Efforts to secure reservoirs upgraded at cost of \$70 million

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The Journal News

The New York City Department of Environmental Protection is rapidly installing anti-terrorism measures to the network of reservoirs, dams and aqueducts that provide more than 1.3 billion gallons of water daily to 9 million residents in the city and Westchester and Putnam counties.

The effort, which is expected to cost about \$70 million, is being conducted with the assistance of the U.S. Army Corps of Engineers in a program that has accelerated since the Sept. 11 terrorist attacks.

Officials at this point are concentrating on the most critical and vulnerable portions of the water system, including the Kensico Dam in Harrison, the Hillview Reservoir in Yonkers, and the Jerome Park Reservoir in the Bronx, said Charles Sturcken, special counsel for the DEP.

To date, police guards have been posted around the reservoirs and the agency is installing motion detectors and other sensing devices around reservoirs and their access points, Sturcken said. Work at the Jerome Park Reservoir is nearly complete, he said, and the department is establishing a police precinct at the site. New lights, cameras, and motion detectors have been installed at Hillview, where other improvements are planned.

The agency also is "hardening" access shafts - facilities that allow workers to get inside dams or access aqueducts hundreds of feet below ground - throughout the watershed.

The sense of urgency within the environmental agency is driven by the fact that the huge network of gravity-fed reservoirs and connecting aqueducts was designed to be accessible for easy servicing and public use, and largely lacks even rudimentary security measures such as hidden cameras.

"The area of most concern is the actual delivery system of the reservoirs, and some parts of that system are more sensitive and critical than others," said James Tierney,

the state's watershed inspector general. "There are efforts now to make sure these most sensitive areas are monitored and watched. That has not always been the case."

The first comprehensive risk assessment of the 160-year-old water system was completed in December 1997 by Michael Collins, then head of the DEP's Police Department. The security review, developed in conjunction with the Federal Bureau of Investigation, found that the entire watershed system, which covers nearly 2,000 square miles, was vulnerable to sabotage that could leave all or parts of the region without water.

In his 125-page report, Collins wrote that, "portions of this system are in a state of disrepair as a result of aging, maintenance neglect and security complacency."

As an example, Collins cited the 900-million gallon Hillview Reservoir, which distributes drinking water to New York City and serves more people than any other reservoir in the country. Collins' study states that, "If a successful assault occurs at Hillview Reservoir, it could be a catastrophic event for the city. One could argue that it should be protected like Fort Knox but, at present, it does not even have the security of a local 7-Eleven."

The analysis found so many areas of vulnerability in the water system that the consequences of sabotage range from the disruption of water service to one or two communities, to catastrophic flooding that could destroy business and residential areas.

The report particularly cites the Kensico Dam, which is 3,300 feet long, 307 feet high and holds back 30.6 billion gallons of water in a reservoir covering some 2,000 acres. The DEP rates Kensico as a critical element of the water system.

According to Collins' analysis, "If Kensico Dam were to fail, the City of White Plains could encounter water depths of 70 feet within one hour of dam failure (dwindling) to 3.5 feet four hours after failure..."

DEP Commissioner Christopher Ward said he did not believe the system's huge dams were easy targets, despite the relatively lax security and the warnings cited in Collins' report, or that there was a significant threat of bioterrorism or other contamination of the reservoir system because of the sheer volume of water involved.

"Blowing something up is enormously difficult given the depth of the dams and valve chambers," Ward said. "These are huge pieces of infrastructure. It would be almost impossible to get down there and lay out the charges at Kensico."

"But the city reservoirs and valve chambers were a security risk," he said. "Obviously after Sept. 11 and continued reports of al-Qaida focusing on water, security became important. There are ways you can harden the security around a city reservoir."

A March 1997 study for the DEP by the Center for Risk Management of Engineering Systems, "Hardening Water Supply Systems to Reduce Their Vulnerability to Attack," stated that some portions of the Kensico Dam, if targeted by explosives, "would focus the force of an explosion and create more effective damage."

Said Ward, "You are never going to be completely safe. There is always a scenario where something could happen. But you manage the system so there is a degree of security and recognize that in life you can never completely protect yourself."

He said the \$70 million allocated for the Army Corps of Engineers' security upgrades should cover all critical components of the region's water system, and that another \$2.1 million was being spent to add 70 police officers to the 142-member force. "We need to cycle them through the New York City police academy for training, and we are bringing them on as fast as we can."

Edward Welch, the new chief of the DEP's police force, said the department would have to be upgraded to meet terrorist threats. "Our focus and training are going to be significantly impacted by the events of 9/11," he said. "We have to assess the threats that are not only biological, chemical and radiological, but we have to look at armed assaults on buildings, computer hacking, explosives and contamination. The way the DEP does its policing will significantly change over the next several months and years."

Security concerns about the Kensico Dam harken back to World War II, when security and bomb experts viewed the dam as susceptible to saboteurs who would go unnoticed once inside, according to the 1997 DEP report. The report, which largely focused on biological or chemical contamination and physical sabotage, noted that on April 11, 1997, graffiti vandals went undetected for three hours as they painted a 10-foot-high, 4-foot-wide statement on the dam's face.

State Assemblyman Richard Brodsky, D-Greenburgh, said that over the years, little attention had been paid to security matters in the watershed.

"The common wisdom was there is nothing you could do to prevent terrorism," said Brodsky, former chair of the Assembly's environment committee. "There has been a fatalism about these facilities that survives Sept. 11. Westchester County has a series of targets that make it a particularly inviting place for those who want to harm our country, our state, or our region. It is clear that not much has been done about it."

The impetus for the environmental agency's internal study came from a 1996 executive order by then-President Bill Clinton, who established a special commission to study the vulnerability of the nation's water supplies, power plants and transportation. The commission worked with a newly formed infrastructure section of the FBI to review security issues.

As a result of Clinton's initiative, said Tierney, the watershed's inspector general, "There were discussions between the FBI, the New York City Police Department and DEP about areas that were potentially vulnerable, and ways to address that. So there was work done in this area before Sept. 11. But after the attacks, efforts were greatly accelerated."

Collins, who declined to discuss his tenure with the DEP, was demoted in 1998 by then-commissioner Joel Miele for speaking out about the water system's vulnerabilities, among other issues. He filed a federal civil lawsuit against the department, contending that the demotion violated his right to free speech and charging that Miele and two deputies buried the report and accused Collins of "inflaming the administration" with the "dangerous document." The demotion was

upheld by a jury after a five-day trial in White Plains in July 2000.

Despite the internal dispute between Collins and DEP leaders, the agency did not ignore the report's warnings, said Sturcken of the DEP. He said that in 1998, the agency asked the U.S. Army Corps of Engineers to help improve watershed security.

"We took that report and discussed with the Army Corps of Engineers just what we needed to do," Sturcken said.

The Army engineers presented a work plan to tackle the most critical problems in January 2001. Sturcken said the proposed projects at that time would have cost about \$20 million.

"After 9/11, we looked at more issues we needed to strengthen the watershed infrastructure," Sturcken said. "We are now looking at up to \$70 million."

He said that the DEP took the issue of sabotage seriously from the beginning, but that "obviously everybody paid more attention after 9/11."

"The original assessments didn't say close the reservoirs and put fences around them," Sturcken said. "But after 9/11, everybody looks at everything differently. You have to keep analyzing and keep ahead of the evildoers."

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