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[Working with water](#)
[An inside look at the North Hudson Sewerage Authority](#)

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When Dr. Richard Wolff, chairman of the North Hudson Sewerage Authority (NHSA) walked into the treatment plant on his first day on the job in 1988, an employee sat with his feet up on the desk, an 'I Love Lucy' episode was playing on a small desk television, and approximately 30 people who were on the payroll who were not present for work.

Much has changed since that day, on the personnel level but more importantly with the dysfunctional water treatment plant that had to be taken over by the state after repeated environmental violations.

“Everything comes here, down the hill. Not only is this a low lying area but the land continues to settle and that causes major problems for the pipes.” – Frank Leanza

In fact, within six months of the takeover and the establishment of the NHSA, the system in Hoboken was brought into compliance with EPA and NJDEP primary treatment requirements. In 1993, a new \$120 million secondary treatment plant was created. A year later, a 10 year old ban on the sewer connections was lifted, which opened the door to new development along the Hudson River. In 1995, the authority purchased sewer collection systems from neighboring municipalities. With awards issued along the way, the NHSA broke ground for a new wet water pump which is supposed to mitigate approximately 80 percent of the flooding in parts of Hoboken's 1st, 3rd and 4th Wards.

When the streets flood in Hoboken...

Wolff said there are three elements that cause flooding in Hoboken: the level of the tide, the intensity of a rain storm, and the elevation of the streets.

“Even though we had to defer attacking the flooding issue directly, we were always aware of it,” said Frank Leanza, an engineer and attorney working for the NHSA. “We instituted requirements at the authority. Any new project in a flood-prone area had to have a storm water detention system.”

According to NHSA officials, problems with collapsed sewer systems, debris that clogged the system, and former poor treatment facilities delayed the authority's ability to address flooding.

“It's almost like dealing with a patient and blood circulation,” Leanza said. “We have to start at the beginning. You couldn't clear a certain part until another part of the system was clean, because if you didn't, the clogging material would just flow to another part and make the problem worse.”

The geography of Hoboken is the crucial factor in its drainage and sewerage problem. In the 1st, 3rd and 4th Wards, many streets are lower than the level of the Hudson River that the sewerage system flows into, and because the city was built over swamp-like land, some streets have settled even lower over the decades. If there's a high tide in the river it counteracts the gravity necessary for rainwater drainage, and the river can actually back up through the system in reverse and flood the streets of those western wards. Leanza said often the NHSA has to electrically power the water out of the pipes into the Hudson River, mostly because the water would flow back into Hoboken if the job were left to gravity.

Gravity an enemy

“Other towns are up on the hill,” Leanza said. “Everything comes here, down the hill. Not only is this a low lying area but the land continues to settle and that causes major problems for the pipes.”

Driving on roads in the western area of town, one can see that some manholes are higher than the rest of the road.

Though there are many causes of flooding, Wolff said the catch basins are not the problem.

“If someone tells you that part of the flooding problem is that the system isn’t cleaned, they don’t know what’s going on,” Wolff said. “They’re misinformed.”

The NHSA has a staff which uses “vac-trucks” which vacuum the catch basins. The NHSA said they spend in between \$400,000 - \$500,000 a year in Hoboken alone to clean the catch basins.

Another way to combat flooding in the area is to recommend that certain buildings be built on higher ground, such as The Sky Club, located in the southwest corner of town. The NHSA would not issue a permit for the developers unless the building was on a higher ground because of the risk of flooding. After a fight in court, the building was placed approximately 10 feet above ground, and flooding has not been an issue for the main floor of The Sky Club, according to officials.

The pump

The pump under construction on Observer Highway, which is supposed to open in either May or June of 2011, is the latest major project of the NHSA.

“It basically deals with the whole area categorized as H1,” Wolff said. The area H1 is a portion of the sewer system that mostly serves the southwest corner of town.

“The system itself is interconnected,” Wolff said. “Engineers have said that it will have mitigating effects on other parts in the city, but we’re not certain of that now.”

Wolff said the NHSA would wait and see how the pumps help alleviate flooding in other regions of the city.

John Tobia, a representative for CH2M Hill, an engineering firm working on the pump, said parts of the funding for the \$18 million pump came from a state revolving loan fund, and also from the American Investment and Recovery Act.

The pump project has three main sectors. The electrical building, visible to the public, will appear on the south end of Observer Highway. The actual pumps are being built in a hole 30 feet underground and east of the electric building. The final sector will operate near the pier slip on the northern side of Hoboken Terminal, where the water will be treated, and then pump into the Hudson River. The new pumps can handle 100,000,000 gallons of water per day.

The pump area was particularly difficult because of its proximity to the old records building owned by New Jersey Transit, as well as the PATH tubes. However, by May, the NHSA hopes another item on their list of accomplishments could be checked off. According to Wolff, the authority is already looking at the possibilities of grants that the next Congress may have to offer for future projects to continue to alleviate flooding in Hoboken, as well as the rest of Hudson County.

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