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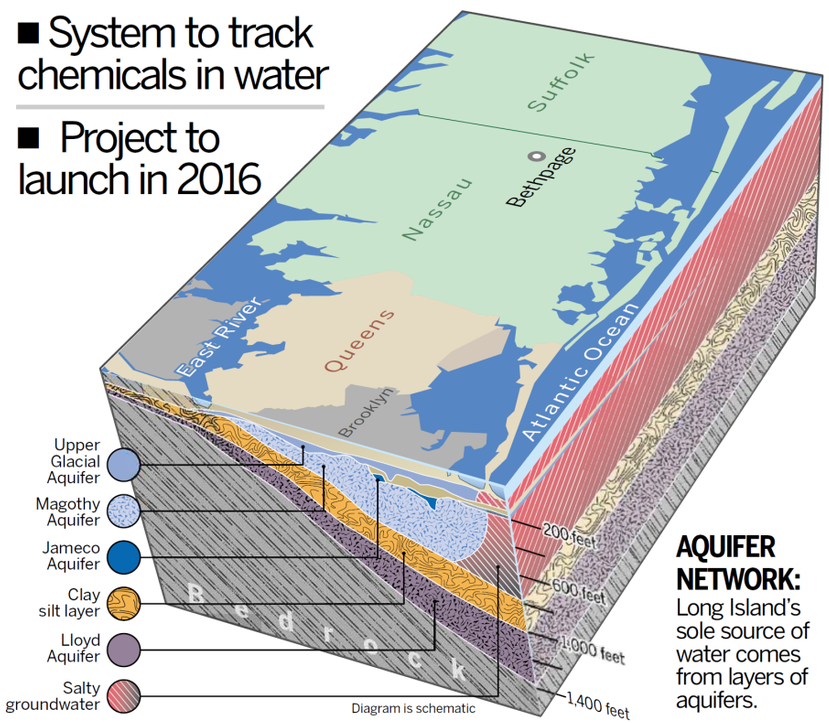
Plans for watchdog wells

- System to track chemicals in water
- Project to launch in 2016



AQUIFER NETWORK: Long Island's sole source of water comes from layers of aquifers.

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A $1.5 million plan to create a network of watchdog wells across geographic Long Island to track contaminants, check for saltwater intrusion and gauge how water penetrates the aquifers is set to launch in 2016.

Created at the urging of Suffolk County Water Authority and the Long Island Commission on Aquifer Protection, the U.S. Geological Survey proposal would cover Nassau and Suffolk counties, as well as Queens and Brooklyn.

The program would use as many as 50 water quality monitoring wells to gauge what is happening to groundwater before emergencies arise. Consider them sentinels scouting for trouble.

"Most of the water quality work that has been done is chasing spills, Superfund sites . . .," USGS supervisory hydrologist Christopher Schubert said. "We don't necessarily want to chase individual plumes. We want to have a finger on the pulse of the aquifer system."

The program will be funded by local, state and federal sources, supporters say, and USGS needs partner agencies to participate to take on the work. Existing contracts will likely be used to launch the project, while the $1.5 million is sought from other stakeholders, said Stephen Terracciano, chief of the USGS Water Science Center in Coram.

The funding is "going to be a joint effort by all those who recognize this is very, very necessary," said Sarah Meyland, director of the Center for Water Resources Management at New York Institute of Technology, based in Old Westbury.

Aquifers are main source

Long Island's sole source of drinking water comes from a network of aquifers beneath the ground that are recharged by precipitation. Land use, from agricultural to industrial, sends contaminants into the ground and those, in turn, seep into groundwater. Water suppliers must then treat groundwater, or raw water, to comply with existing safe drinking water standards.

The Long Island aquifer system contains an estimated 80 trillion gallons of water and public water suppliers pump an average 260 million gallons per day, according to a USGS publication released last month detailing water quality in North Atlantic Coastal Plain aquifers.

TAINTED SITES
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Nassau and Suffolk counties have had monitoring programs over the years but nothing as robust as what is being proposed, Meyland said.

"We really need this info badly," she said. "We're going to learn things that we should have learned years ago."

The region faces several threats, from pumping that sucks saltwater into freshwater supplies to contamination, natural and man-made.

New York State has 886 active Superfund cleanup sites to remove hazardous waste. Of those, 17 percent are on Long Island and one-third of those sites have some sort of plume or off-site contamination moving through the system.

Detecting problems early

The network of sentinel wells would test for pesticides, volatile organic chemicals, hormones, pharmaceuticals, metals, nutrients, radionuclides and other contaminants. The data will be available online to the public using USGS and U.S. Environmental Protection Agency portals, Schubert said.

The hope is to detect a problem before it reaches supply wells.

"One of the things we want to do is make sure we are getting a snapshot of all of the aquifers," said Carrie Meek Gallagher, chief sustainability officer for the Suffolk County Water Authority. "This is really trying to take a much more proactive step."

The initial proposal spans through 2019 and will lead to the creation of a public database of contaminants found at the well sites. It will also allow researchers to examine how land-use practices affect groundwater over time and how contaminants move through different soils to get to the aquifers.

"The meat and potatoes is to look at threats from contamination that enters the system at the water table," Schubert said.

By the time a toxin is discovered at a well site, it can already be too late because the length of time it takes for something in the ground to hit groundwater can be decades. Such is the case in the Bethpage Water District, where a state cleanup of contamination from several plumes dates back to World War II-era manufacturing.

"It's kind of too late for them," Schubert said. "For much of the rest of the Island, it isn't. How many times are we going to let that experience repeat itself?"

Massapequa Water District Superintendent Stan Carey said more science and data are always helpful, but knowing where the problems are doesn't always translate into cleanup money or interest.

"I think information is great," he said. "The real question at the end of the day is what's going to be done if you find a contaminant?"

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