

# Pipeline of trouble

■ Engineers say deteriorating Suffolk sewage pipe puts Great South Bay at risk and must be replaced

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The outfall pipe at Suffolk County's largest sewage plant is deteriorating decades ahead of schedule, and engineers hired by the county say it must be replaced to avoid the risk of spilling millions of gallons of treated effluent into the Great South Bay.

It could cost up to \$150 million to fix structural problems on the 14,000-foot section of buried pipeline that runs beneath the bay between the Bergen Point treatment plant in West Babylon and Cedar Beach.

Although the effluent is treated, environmental officials and advocates fear sewage leaks could worsen water quality in the bay, which has suffered from brown tide algae blooms and the decades-long collapse of the estuary's hard clam fishery.

Engineers' concerns center on hundreds of breaks in high-tension wires that wrap around the concrete surrounding the steel pipe. When enough wires snap, county consultants say the concrete will crack and allow water to corrode the steel pipe and trigger its eventual collapse.

No leaks have been detected. The consultants said it was difficult to tell the extent of the damage without excavating large portions of the pipeline beneath the bay. But they advised Suffolk officials late last year to begin designing a replacement outfall, noting in a Dec. 31 letter: "The failure of this pipeline could have catastrophic environmental impacts on the Great South Bay as well as significant fines" from state and federal environmental agencies.

Suffolk County Executive Steve Levy said the county was evaluating different alternatives for replacing the pipe. It may repair damaged sections piece by piece or dig a deeper tunnel for an entirely new pipeline. In the meantime, he said, the department of public works will buy sections of replacement pipe this fall to have on hand in case of a rupture.

"There is not an imminent threat of breakage," Levy said. "This pipe can last us another 30 years. But you always want to plan for the worst."

The bay section of the 6-mile outfall is made of prestressed concrete cylinder pipe 6 feet in diameter. Most of the 3.4-mile extension into the Atlantic is built of different materials.

Each day, the Bergen Point pipeline handles an average of 25 million gallons of treated effluent from customers spread out across 57 square miles of southern Babylon and Islip towns. It was built as part of the Southwest Sewer District, whose development was shadowed by years of mechanical glitches and criminal scandals.

Suffolk's public works department began testing the pipeline five years ago, after hearing that structural problems had developed in water districts in California, Texas and other places where the same type of pipe was in use.

The problems "were very specific to the pipe from the late 1970s," when the outfall was constructed, said Ben Wright, chief engineer of sanitation for Suffolk's Department of Public Works. Wright said he believed the pipe was supposed to last 80 to 100 years.

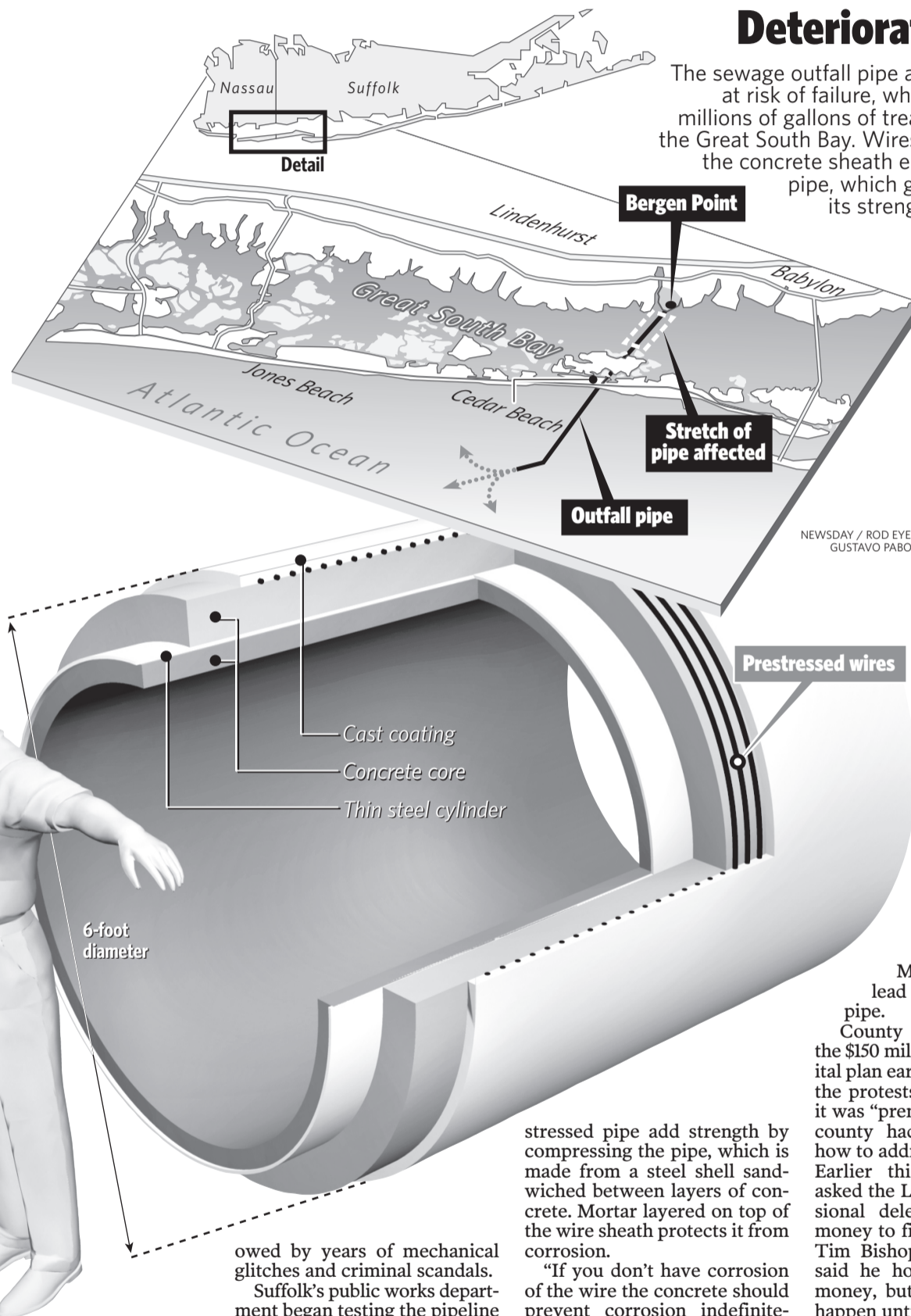
The tension wires in prestressed pipe add strength by compressing the pipe, which is made from a steel shell sandwiched between layers of concrete. Mortar layered on top of the wire sheath protects it from corrosion.

"If you don't have corrosion of the wire the concrete should prevent corrosion indefinitely," said Del Hausmann, a civil engineer who worked for decades in the pipe industry. "Once you lose this wire over a significant area, you've lost the pipe."

Acoustic tests done in 2002 and 2003 on the Bergen Point outfall recorded 717 wire breaks in three months in a 5,000-foot section of the bay pipe. The firm that conducted the tests called it "the worst pipeline for breaks that they have ever monitored," according to a Dec. 31 letter to Wright

## Deteriorating pipe

The sewage outfall pipe at Bergen Point is at risk of failure, which could release millions of gallons of treated sewage into the Great South Bay. Wires wrapped inside the concrete sheath encasing the steel pipe, which give the structure its strength, are breaking.



from engineers at Camp Dresser & McKee, the county's lead consultant on the pipe.

County legislators added the \$150 million to Suffolk's capital plan earlier this month over the protests of Levy, who said it was "premature" because the county had not yet decided how to address the failing pipe. Earlier this year, Levy had asked the Long Island congressional delegation for federal money to fix the pipeline. Rep. Tim Bishop (D-Southampton) said he hoped to secure the money, but it was unlikely to happen until 2009.

The county told the New York State Department of Environmental Conservation about the pipeline problem several weeks ago, said DEC regional director Peter Scully. "While we have very little detailed or concrete information, because the county is concerned, we are concerned. . . . Government on all levels has been working to improve conditions in the Great South Bay, so anything that would threaten to diminish water quality is a concern."