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# Year after Irene, New Yorkers ponder sea barriers

By JENNIFER PELTZ, Associated Press – 6 days ago

NEW YORK (AP) — Two years before Hurricane Irene created the prospect of a flooding nightmare in New York City, 100 scientists and engineers met to sketch out a bold defense: massive, moveable barriers to shield the city from a storm-stirred sea.

Though the storm caused billions of dollars in damage along the Eastern Seaboard, Irene proved not to be the urban catastrophe forecasters feared. But in the wake of the close call a year ago, elected officials and community groups are pressing for an evaluation of whether sea barriers make sense for New York.

The city has been gathering information, while stressing that barriers are only one of many ideas being studied.

Initially hesitant to recommend spending money studying a remote possibility, state Assemblyman Richard Gottfried now finds the barrier idea realistic enough that he and state Sen. Thomas Duane have urged the city to give it a thorough examination. Gottfried changed his mind before Irene, but feels the storm — which hit the city head-on as a tropical storm on Aug. 28, 2011 — brought the point home to others.

"I think it did make it clear to a lot of New Yorkers that we could not take our safety for granted," he said this week.

To advocates, Irene — which shuttered subways, spurred evacuation orders for 370,000 people and raised fears that a surge of seawater would cripple the U.S. financial capital — added urgency to what they see as the best hope for protecting New York against a mounting threat. But some experts believe the city is better off focusing on more moderate, immediate measures to limit potential damage from storms and rising seas.

The discussion illuminates a potential dividing line for this city and others projected to face a more flood-prone future in a changing climate: take big, difficult steps in hopes of thwarting high water, or a roster of smaller ones intended to help manage it?

New York, for its part, says it's giving equal time to both approaches.

The city administration is working toward a hard-numbers analysis of natural risks and how well various coast-protection techniques would address them, said Adam Freed, the deputy director of Mayor Michael Bloomberg's Office of Long-Term Planning and Sustainability. Storm-surge barriers are among the options being examined; officials have talked in recent months with some participants in a 2009 academic conference on the issue.

In the meantime, the city also has flood-proofed some places — by installing floodgates at sewage plants, for example, and raising the ground level while redeveloping a low-lying area in Queens.

"There's no one-size-fits-all solution to the risk we face, and it's not just one risk," Freed said, noting that the city also is preparing for more frequent heat waves, more extreme rainstorms and other anticipated global-warming effects. "It is going to be a suite of strategies that encompass everything."

Proponents say sea barriers would solve a big piece of the problem, and they point to examples in cities ranging from London to Providence, R.I. But some scientists and engineers feel the structures could create a false sense of security and raise environmental and social-equity questions.

"Who gets included to be behind the gate, and who doesn't get included? ... How do you make that decision in a fair way?" said Robert Swanson, an oceanographer at Long Island's Stony Brook University, where the barrier idea is a topic of cordial debate.

Two of his colleagues, oceanography professor Malcolm J. Bowman and lecturer and engineer Douglas Hill, are driving forces behind the idea and helped galvanize the 2009 conference, which featured conceptual designs from engineering firms.

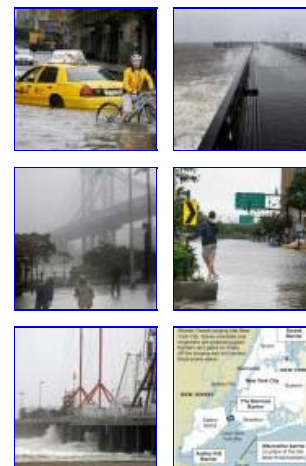
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FILE - In this Aug. 28, 2011, file photo, a biker makes his way around a taxi stranded in floodwaters of Hurricane Irene, downgraded to a tropical storm, in New York. Two years before Irene created the prospect of a flooding nightmare in New York City, 100 scientists and engineers met to sketch out a bold defense: massive, moveable barriers to shield the city from a storm-stirred sea. (AP Photo/Peter Morgan, File)



### Map



One strategy entailed an estimated \$9.1 billion set of barriers a mile long or shorter at three critical points around the city's waterways. The network would protect Manhattan and parts of the four outer boroughs and New Jersey, but not some vulnerable swaths of Brooklyn and Queens.

Some of them stood to gain protection in an alternative design: a single, 5-mile-long barrier between Sandy Hook, N.J., and the Rockaway Peninsula in Queens, estimated at \$5.9 billion.

Both approaches were designed to block a 25-foot storm surge but had navigational locks or other mechanisms to let water and ship traffic flow under normal conditions. Some designs featured visible walls or berms above the waterline, but one envisioned a wall that would lie flat underwater and rise into position when needed.

Advocates note that an 1821 hurricane flooded what's now Manhattan's financial district — and that experts estimate the city could face a surge as high as 25 feet and a 3 million-person evacuation if threatened by a storm as strong as a notorious 1938 hurricane that sawed through nearby Long Island. Moreover, the city projects global warming could boost sea levels by up to 4 ½ feet by the end of the century, making flooding a growing threat.

Troubled by the projections, retired newspaper publisher and community activist Robert Trentlyon started broaching storm-surge barriers with local organizations and officials about two years ago.

Then came Irene, a 500-mile-wide hurricane that weakened to a tropical storm with 65-mph winds just before its center made landfall at Brooklyn's Coney Island.

"There's absolutely no question: From the time of Irene, for the next six months, people were more concerned," said Trentlyon, who now makes his rounds with a growing file of supportive statements.

U.S. Rep. Jerry Nadler urged city officials in a letter this month to take a comprehensive look at storm-surge barriers, bulkheads and other flood-fighting devices.

The City Council's Environmental Protection Committee heard from barrier advocates, among others, at a hearing in December, and Chairman James Gennaro would like the barriers to be among ideas getting further review by a city climate-change task force.

The council passed a proposal Wednesday to expand the group's scope to assess how heat, storms and flooding affect various aspects of the city.

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