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# Engineers' Warnings in 2009 Detailed Storm Surge Threat to the Region



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A previously damaged pier in Atlantic City during Hurricane Sandy. At a 2009 seminar, the American Society of Civil Engineers proposed ways for minimizing the risk of flooding to the area.

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As the authorities examine how [they can protect New York City](#) from extreme weather events like [Hurricane Sandy](#), one of the nation's most influential groups of engineers is pointing out that more than three years ago, it presented detailed warnings that a devastating storm surge in the region was all but inevitable.

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The warnings were voiced at a seminar in New York City convened by the [American Society of Civil Engineers](#), whose findings are so respected that they are often written into building codes around the world. Corporate, academic and government engineers at the meeting presented computer simulations of the [storm-surge threat](#) and detailed engineering designs of measures to counter it.

Officials from the city's Office of Emergency Management and the United States Army Corps of Engineers took part in the seminar, serving on review panels or giving talks.

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Photographs  
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Participants in the 2009 seminar called on officials to seriously consider whether to install surge barriers or tide gates in New York Harbor to protect the city. Their views are contained in 300 pages of technical papers, historical studies and engineering designs from the seminar, copies of which the society provided to The New York Times.

Any effort to install such barriers would be extremely costly and take many years to carry out.

Even if the government had embraced such a proposal in 2009, it would not have been in place to prevent destruction from Tropical Storm Irene last year or Hurricane Sandy last week.

[Some scientists](#) have championed such barriers for years. But as the region struggles with the devastation after the storm, some of the engineers involved in the 2009

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seminar see parallels to alarms that went unheeded before [Hurricane Katrina](#) struck New Orleans in 2005.

“Scientists and engineers were saying years before Katrina happened, ‘Hey, it’s going to happen, folks. Stop putting your head in the sand,’ ” said Malcolm Bowman, a professor of oceanography at the State University at Stony Brook who spoke at the conference and is an editor of the proceedings.

“The same thing’s now happened here,” Professor Bowman said.

He said the most workable plan would involve a roughly five-mile barrier from Sandy Hook, N.J., to the Rockaway Peninsula. A smaller barrier would stretch across the top of the East River to protect against surges from Long Island Sound.

East River barriers might rise from the ocean floor using hydraulics as a threat approached, and the larger barrier would require locks and sluiceways to allow ships and water to pass during ordinary times.

Mayor Michael R. Bloomberg has expressed doubt about such barriers and whether the benefits would outweigh the costs — well over \$10 billion, by most estimates.

“I don’t think there’s any practical way to build barriers in the oceans,” he said on Thursday. “Even if you spent a fortune, it’s not clear to me that you would get much value for it.”

Asked about the society’s findings in 2009, Lauren Passalacqua, a spokeswoman for the mayor, said on Sunday that the city was looking into a number of measures to protect against storms, including barriers.

Gov. Andrew M. Cuomo has said in recent days that barriers were worth seriously examining.

Experts who were at the 2009 conference said that while the technology comes with many questions, it has already been deployed around the world, including in the Netherlands and on the Thames in London. Several American cities have versions of the structures, and a barrier surrounds St. Petersburg, Russia.



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Jeroen Aerts, a researcher from the University of Amsterdam who was retained by the city in 2009 to assess flood risks and protections, said he was asked by officials to look into barriers after Tropical Storm Irene.

Dr. Aerts said that he was still working on the research, but that the city should consider such a proposal. "Obviously, there's a sense of urgency now," he said.

*This article has been revised to reflect the following correction:*

**Correction: November 7, 2012**

A picture caption on Monday with an article about a warning issued in 2009 about a storm surge threat to the New York region omitted part of the name of the organization that issued the warning. As the article correctly noted, it is the American Society of Civil Engineers, not the American Society of Engineers.

A version of this article appeared in print on November 5, 2012, on page A23 of the New York edition with the headline: Engineers' Warnings in 2009 Detailed Storm Surge Threat to the Region.

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