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LETTERS TO THE EDITOR



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New York City Plans to Be Flooded

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New York City plans to be flooded. Unlike people living in several cities in Europe and New England, who are protected from coastal flooding with storm surge barriers, New Yorkers are promised only "resilience," the ability to withstand and recover. Because New Yorkers are tough. So says Mayor Michael R. Bloomberg's new plan for the city, *A Stronger, More Resilient New York*.

Storm surge, a gradual rise in sea level over a few hours or days, is identified in the Mayor's plan as the most severe threat from climate change, worsening by the 2050s as sea level rises and hurricanes become more severe. Two or three storm-surge barriers, which would be closed to block the entrances to New York Harbor when a storm surge approached, would protect the entire inner city as well as nearby New Jersey and the Hudson Valley, places that are blank areas on the City's flood maps.

Instead, the Mayor's plan calls for 241 initiatives, about one-third of which directly address local flooding. These include a patchwork of local measures to protect the most vulnerable areas in the inner city, including Red Hook in Brooklyn, Southern Manhattan, the lower East Side, East Harlem, and Hunts Point in the Bronx. These would be guarded not with conventional seawalls or levees but with a novel "integrated flood protection system." Exactly what that means would be determined by a global design competition.

What the planners seem not to have noticed are the findings of the Interagency Performance Evaluation Task Force (IPET), a monumental study of the lessons of Hurricane Katrina in New Orleans in 2005. Where many floodwalls failed in New Orleans was at their ends, at the junction with either another type of structure or adjacent land. Thus, these fragmented protection measures in the City may well be outflanked by flood waters, and they almost guarantee that nearby neighborhoods would suffer worse flooding.

Resilience would otherwise be provided by individual owners of buildings or homes who would be expected to move their utilities and furnaces out of the basement into upper floors or, in some cases, to raise their entire houses above the expected flood level. Whatever the merits of these local plans for interim protection, the City needs long-term protection as the threat of coastal flooding worsens, a concept that seems missing from the Mayor's plan.

Conceptual designs and cost estimates for barriers to protect New York City were presented by four major engineering firms in 2009 at a conference sponsored by the Metropolitan Section of the American Society of Civil Engineers (ASCE). Similar barriers have been built during the past 50 years and have successfully protected London, U.K.; Rotterdam, the Netherlands; and St. Petersburg, Russia, in Europe, and New Bedford, Massachusetts; Providence, Rhode Island; and Stamford, Connecticut, in New England. At another ASCE conference in April 2013, the five organizations that provide the metropolitan region with power, transportation, and wastewater treatment detailed the myriad individual damages due to the storm surge from Superstorm Sandy and agreed with the conclusion of the Port Authority of New York and New Jersey that "an increased regional approach may be required to provide a better response."

Why not storm surge barriers? One of the 445 pages of the Mayor's plan is devoted to dismissing storm surge barriers for New York City.

Cost? The Mayor's plan estimates the cost of barriers as $20 to $30 billion. By comparison, the City's proposed Phase 1 is estimated at $20 billion, with more to come. The cost of Hurricane Sandy to New York City alone was estimated at $19 billion. By the 2050s, another Hurricane Sandy would cost the city $50 billion, according to the Mayor.

Social justice? The barriers would create an "insiders/outsiders dynamic," according to the Mayor's plan, where those behind the barriers would receive maximum protection, and others would be left out. But apparently, the Mayor's fragmented plan, in which neighborhoods judged vulnerable

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are given local protection at the expense of nearby neighborhoods, would not.

Hydrodynamic and environmental impacts? Well, these impacts haven't prevented other cities from being protected by barriers. That is all the more reason to begin to evaluate what the impacts may be and how they may be ameliorated.

Safety? Although none of the several other barriers elsewhere has ever failed, in some cases for half a century, it is feared that their failure in New York would lead to catastrophic flooding.

But no surprises; better, it would seem, for New York City just to plan to be flooded.



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