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By 2080, New York City could be fortified with a belt of steel--or ringed with wetlands, as in this architect's vision.

FEATURES » JANUARY 28, 2013

Disaster Capitalism Hits New York

The city will adapt to flooding—but at the expense of the poor?

BY ARUN GUPTA

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For more than a decade before Hurricane Sandy, oceanography professor Malcolm Bowman, head of the [Storm Surge Research Group](#) at the State University of New York at Stony Brook, warned that a superstorm would someday drown New York City. There were plenty of precedents, he noted, such as the 1992 nor'easter that crippled train lines and [Tropical Storm Floyd](#) in 1999, which dumped a foot of rain in 24 hours and caused flash flooding.

“My middle name is Noah,” laughs Bowman, who looks the part of an old salt, with a tanned complexion and trimmed white beard. “The flood’s coming, you better build the ark, get everybody aboard.”

In 2008, Bowman was [asked](#) to join Mayor Michael Bloomberg’s New York City Panel on Climate Change, and he [recommended](#) that the city build surge barriers like those protecting London and the Netherlands. But his advice wasn’t heeded. According to Bowman, “the panel thought that it was too ambitious, too expensive, too futuristic.”

Now, in the aftermath of the most devastating storm New York has ever seen—one that [claimed](#) more than 100 lives in the region, destroyed thousands of homes and businesses, and [notched](#) a

When asked if New York’s poor had been considered in the initial discussions of flood-risk management, Aerts says, “That’s a new issue. We didn’t discuss it, no.”

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record storm surge of 13.8 feet in Lower Manhattan—an idea that was once seen as implausible now seems inevitable. One poll [found](#) that 80 percent of the public favors fortifying the city with surge barriers. “Money shouldn’t be a problem,” [declared](#) the *New York Times*. Gov. Andrew Cuomo has [thrown](#) his weight behind barriers, [as have](#) the state’s top Congress members and New York City Council Speaker Christine Quinn, the [frontrunner](#) in this year’s mayoral contest.

Bowman and his Storm Surge Research Group have sketched out a plan that could cost an estimated \$25 billion and centers on a five-mile-long “[Outer Harbor Gateway](#)” between Sandy Hook, New Jersey and the Rockaway peninsula. The barrier would be a belt of landfill, stone and reinforced concrete, possibly topped with a highway that would provide an alternate route from the mid-Atlantic to New England. Thirty-foot-high sand berms would be piled on Sandy Hook and the Rockaways to prevent flood waters from circumventing the gateway. Another gate, this one a mile long, would be built in the upper East River to stop surges coming in from the Long Island Sound to the north.

Proponents [say](#) the funding question could be solved by making the highway bypass a toll road. The next step is for Congress to authorize the Army Corps of Engineers to conduct a feasibility study, which experts say could take five years and cost more than \$20 million.

Despite the costs, storm barriers seem more a question of when, not if, given that risks of more powerful storms barreling in on higher sea levels will increase exponentially as the Greenland and Antarctic ice sheets [melt](#) ever faster. Scientists [say](#) coastal cities should plan for sea levels to rise by seven feet by the year 2100. In Brooklyn and Queens alone, says Bowman, “you have to worry about the two to three million people who live less than six feet above high-tide level.” Since it would be virtually impossible for millions of people to abandon New York anytime soon, planners are trying to figure out the best way to hold the next hurricane at bay.

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The ultimate gated community

To provide answers, the city tapped Jeroen Aerts, a professor of risk management and climate change at University of Amsterdam, to compile a cost-benefit analysis of flood-risk management strategies. Aerts says that, based on economic assets at risk, New York is the second most vulnerable port city in the world, after Miami. He cites an estimate that by 2080, the metropolitan area from New York to Newark, N.J. will contain about \$2.15 trillion in assets that could be damaged by extreme storms. Compared to that—or even the \$71 billion post-Sandy repair [bill](#) for New York and New Jersey—the \$25 billion estimate for storm-surge protection looks like a bargain.

However, Aerts warns, “Don’t put everything on storm-surge barriers.” Because nothing is foolproof, he advocates “a multi-layered safety system.” This includes back-up measures such as updating zoning and building codes, strengthening insurance policies and committing more resources to evacuation if the barriers do fail, as they [did](#) in New Orleans during Hurricane Katrina.

Nonetheless, flood barriers will be the front line of coastal defense. Aerts maintains that barriers are not just about safeguarding glittery skyscrapers. “Everyone benefits from storm-surge barriers because the whole city is protected, not only the developers.”

So far in the cost-benefit calculations, however, some people have been given less consideration

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than others. When asked if New York's poor, who **comprise** 41 percent of the city's population based on living-wage standards (**21 percent** by federal guidelines), had been considered in the initial discussions, Aerts says, "That's a new issue. We didn't discuss it, no." He adds that the thinking has changed after Sandy as planners realize low-income groups "are the most vulnerable not just because of the structures they live in, but because of their coping capacity."

This is precisely what worries critics. "Chances are, public policy is going to support only those developments that are high end, and are able to muster the most sophisticated and advanced flood protections," says Tom Angotti, **director** of the Hunter College Center for Community Planning and Development. "Everyone else, the one- and two-family homes, are not going to be able to make it, unless they're mansion owners who have deep pockets." Indeed, in early December, the city **announced** that it will "update its building code to require more stringent protection against floods," such as by requiring all new and rebuilt homes to exceed federal guidelines on elevation, which will raise housing costs significantly.

This change will severely affect low-income people, Angotti says. "Many renters will find that there will be no more rental housing to afford because now it will be too expensive." But it is public housing residents—**79,000** of whom were trapped by Sandy in decrepit towers without electricity—who will be the big losers. Angotti says that because public housing is already on the road to privatization, "Sandy provides an opportunity for the closure of public housing in the Rockaways, Coney Island, possibly Red Hook, which would open up new opportunities for private real estate development."

It's all part of the "market mentality," says Angotti. "Let the market handle it, and the market will exclude low-income people without them even having to say it. It will just be as if it were a natural thing."

While everyone pays for flood works, individuals are left exposed to market forces, and big real estate developers reap the benefits. The invisible hand never pauses. After Sandy, one developer **snatched up** a publicly subsidized 1,093-apartment complex on the Rockaways and is counting on raising rents to profit from the investment—which means pushing out low-income tenants. Along the New York and New Jersey coast, speculators are **preying** on homeowners desperate to unload damaged houses for less than half their pre-storm value. Meanwhile, **Arverne by the Sea**, a billion-dollar luxury complex on the Rockaways, emerged virtually unscathed because it was designed to withstand hurricane forces.

Scientists **say** that by the time sea levels rise by one meter—which could take from 50 years to more than a century—barrier islands such as the Rockaways will have to be encircled by levees to survive. So until then, if left unchecked, wealthy homeowners and middle-income renters will continue to flock to these desirable waterfront regions.

Because adaptation focuses on protecting economic assets, and because coastal communities rely on the business, taxes and revenue that come with development, local building restrictions tend to crumble in the wake of storms like a sand castle at high tide. For example, after Hurricane Hugo pummeled South Carolina in 1989, regulations were eased to allow rebuilding on islands near Charleston such that "megastructures perched on fat pilings" have replaced small, modest homes, **according** to the *Wall Street Journal*. Despite the obvious dangers and devastation to barrier islands such as Fire Island, where Sandy **caused** 30 years' worth of erosion overnight, Cuomo, Bloomberg, Obama and New Jersey Gov. Chris Christie all vowed, "We're rebuilding."

Meanwhile, high oceanside rents will push low-income workers to less expensive locales either outside the city or in remote neighborhoods, where they lack support networks and face overcrowding, underfunded services and hours of commuting.

If the free market goes unfettered, that two-pronged dystopian scenario could play out on a broader scale across the U.S. coast. While storm barriers can guard New York City's flanks, it's impossible to seal the **3,700 miles** of Atlantic and Gulf coastline with seawalls and levees. Unique coastal cultures such as the **Cajun** in Louisiana, **Seminoles** in Florida and the **Gullah and Geechee** of the Southeast will likely vanish if their lands disappear beneath the waves. By the latter part of the 21st century, the wealthy will probably cluster in those seaside cities and resorts that can afford flood barriers and hardened towers. Coasts not armored against rising seas will push inland, and their developed areas may shift to live-at-your-own-risk ramshackle dwellings for middle- and low-income groups seeking seaside relief from deadly heat waves brought on by

global warming.

Soft Infrastructure

An alternative proposal for climate-change adaptation, more complementary than competing, inserts the social back into the debate. If barriers and berms are “hard infrastructure,” then “soft infrastructure” is the flip side. Adam Yarinsky, a [principal](#) of the New York-based Architecture Research Office and co-author of *On the Water: Palisade Bay*, which developed the concept of soft infrastructure, says the idea is to “emulate the way nature responds to storm events [by building] in planted natural systems of shallow water as opposed to a vertical seawall that tries to define an absolute line between water and land. It allows for a more fluid, dynamic tidal zone, which has the benefit of dampening wave force from a storm surge.”

Yarinsky and his colleagues acknowledge that soft infrastructure cannot replace surge barriers. Aerts, the risk-management expert, explains, “If you have oyster banks or marshlands it doesn’t matter, the surge is going over it. Wetlands help to reduce the strength of waves, but it doesn’t reduce the height of the waves.”

But soft infrastructure [can be](#) an important complement to surge barriers by allowing for controlled flooding that can replace seawalls in some areas, cleaning up blighted ecosystems and serving as a blueprint for viable, mixed-income, mixed-use communities. Proposals reimagining New York’s waterfront, grouped in a recent exhibit titled “[Rising Currents](#)” at the Museum of Modern Art, [include](#) a working waterfront of sustainable oyster beds, fish farms and algal biofuels; seeding the bay with flood-tempering barrier islands, wetlands and breakwaters; and redesigning flood-prone areas with sunken forests, porous streets and hanging buildings to allow water to enter in a controlled fashion.

Soft infrastructure has the potential to address the failings of public housing, which warehoused the poor away from services, from jobs and from the civic and cultural life of the city. Building a “[new aqueous city](#)” of flood-resilient housing on the water, fringing the urban edges with parks and wetlands, and creating a working waterfront would result in desirable housing, recreation and jobs that are denied to many New Yorkers. While this has the potential to turn into boutique urban living, Yarinsky’s co-authors, architects Guy Nordenson and Catherine Seavitt, [argue](#) in favor of creating “flexible and democratic zoning formulae for coastal development that ... increase community welfare and resilience to natural disasters.”

It’s an exciting vision, but democratizing urban planning is a difficult task at best, and it runs counter to how developers manipulate government to generate private wealth. Angotti points out that the rampant waterfront development of the last decade under Bloomberg has the government’s fingerprints all over it. Rezoning jacked land values “10, 20, 40 times” overnight while the city funneled subsidies, loans and tax breaks to private developers building on those lands.

If it isn’t a problem to find money for surge barriers, as the *New York Times* asserts, then, given the political will, money can surely be found to develop soft infrastructure that benefits more than developers and million-dollar condo owners. Angotti suggests that instead of burdening the public with the costs, big developers should be made to pay for barriers designed to fortify their “luxury enclaves” and to fund protection for the city’s most vulnerable communities. Taxing the wealthy, high-end developments and corporate skyscrapers would generate money for both hard and soft infrastructure.

But political will does not develop out of thin air. To achieve this vision will require broad-based social mobilization by the people who really make the city run. They must assert their right to remake urban space around communal, democratic, liberatory and cultural experiences, rather than ones based on individualism, consumption, spectacle and accumulation.

One thing is certain: Rather than allow the political conversation to revolve around cold cost-benefit calculations, we must redefine the problem in social and ecological terms to make people’s needs and natural approaches central to the solution.

Of course, neither hard nor soft infrastructure can hold back rising seas forever. Retreat is inevitable. Even the Dutch, who are at the forefront of [adapting](#) to rising seas (as [26 percent](#) of their country is below sea level), plan to eventually abandon 20 percent of their land, [according](#)

to scientists.

In the United States, says Orrin H. Pilkey, professor emeritus of geology at Duke University, "Virtually every port city up and down the East Coast is talking about getting gates." But some cities are doomed. "Miami, Palm Beach and Fort Lauderdale are sitting on top of very porous limestone" that is as much as 75 feet thick, Pilkey says. A levee is "not going to make the slightest difference. The sea level is going to come up right inside behind it." A two-meter rise will mean "a thousand-plus miles of shoreline will have to be abandoned," he adds. Bowman says New Orleans is in a similar boat. Caught between "subsidence"—sinking land—and rising sea levels, "its days are numbered."

By the year 2300, sea levels could easily be 12 feet higher, and if Greenland and Antarctica's ice sheets melt entirely, sea levels will rise by 200 feet, entombing virtually all coastal cities under the ocean. In the meantime, says Bowman, "We need to look beyond the next election cycle, the next quarterly bottom line of the corporation. Let's give it our best shot for, say, 200 years. Then maybe we have to abandon it and the city as you know it dies."

ABOUT THIS AUTHOR

Arun Gupta is co-founder of the *Occupy Wall Street Journal* and a founding editor of the award-winning grassroots NYC newspaper *The Independent*. A regular contributor to *Salon* and *Alternet*, he is writing a book on the decline of the American empire for Haymarket Books. His reporting on the national Occupy movement can be found at occupyusatoday.com.

[More information about Arun Gupta](#)

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