

## Managed Retreat in Oakwood Beach, Staten Island (New York City)

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<b>Keywords</b>	Managed retreat, buyout, equity, sea level rise, storm surge, Hurricane Sandy
<b>City Population (Staten Island)</b>	495,747
<b>City Area (Staten Island)</b>	155 km <sup>2</sup>
<b>City GDP (Staten Island)</b>	17.5 billion USD
<b>Climate Zone</b>	Cfa (humid subtropical)
<b>ARC3.3 Linkage</b>	Equity, Development, and Informality Element

**Introduction.** Oakwood Beach has been subject to extreme storms, flooding, wildfire, and sewage pollution for decades. However, a chronic lack of support following disasters, combined with political differences between Staten Island and the rest of New York City, has led Staten Island to see itself as the “forgotten borough.” One of the most devastating examples was a 1992 nor’easter that brought winds of up to 70 mph and extensive flooding. Shortly after, the Oakwood Beach Flood Victims Committee convened to study flooding and advocate for coastal protection. The flood protection berm that the city promised in response took almost a decade to construct, and was completely destroyed by Hurricane Sandy (Rush, 2017). In 1993, frustrated with insufficient city support, the borough passed a non-binding referendum on secession by a 2-1 margin.

Hurricane Sandy generated storm surges of up to fourteen feet on Staten Island. Nearly 100 homes were destroyed; the rest suffered significant damage. Most were still without electricity or heat three weeks after the storm, and some areas were flooded with up to sixteen feet of water. Three of the fifty-three people who lost their lives in Staten Island lived in Oakwood Beach. The chronic infilling of coastal marshes over the last few decades only intensified the force of the storm surge as it moved inland—more than half of the fatalities occurred in former wetlands that had been landfilled for development.

In announcing New York City’s “Build it Back” recovery program, Mayor Michael Bloomberg declared, “We cannot and will not abandon our waterfront.” Many Oakwood Beach residents, however, had little faith that the city would provide ade-

quate recovery support within a reasonable timeframe. Rather than “build it back,” community member Joseph Tirone mentioned buyout at a community meeting, and the surprising level of enthusiasm led to the formation of The Oakwood Beach Buyout Committee. The group convened to explore city and state buyout options and went door to door raising awareness.

Though buyouts are often viewed as a last resort, Oakwood Beach recognized an opportunity to escape recurring cycles of destruction and recovery. Opaque and top-down decision-making processes in buyout programs can lead to equity issues. However, Oakwood Beach’s process was community- instigated and run. After Hurricane Katrina, New Orleans officials released the infamous green dot map, which showed which neighborhoods were slated for conversion into green space. None of the residents of these areas had been consulted. Oakwood Beach residents, on the other hand, were involved in almost every stage of the relocation process. Author Elizabeth Rush writes that “rather than viewing buyouts as further evidence of systemic marginalization, many Staten Islanders saw it as a chance to finally move away from the long-term neglect that made them vulnerable, offering instead an opportunity for a fresh start” (Rush, 2017).



**Figure 1.** Oakwood Beach in 2010 and 2022  
Source: Salles, 2022

**Implementation.** In late 2012 both the New York city and state governments offered buyout programs. Under the city's Build it Back Acquisition plan, communities retain ownership over bought-out properties and allow for their potential redevelopment. Under the state's Federal Department of Housing and Urban Development's Hazard Mitigation Grant Program (HMGP), all existing structures are demolished, and the land is rezoned and restricted to open space uses, barring any further development on the property. Oakwood Beach chose the state plan to prevent future development out of distrust of city management. Residents did not want potential future residents living in dangerous areas, but also did not want to see their land redeveloped into luxury apartments.

The Oakwood Beach Buyout Committee approached New York State Governor Andrew Cuomo directly with their buyout request, who then announced a program to leverage federal relief money to purchase Oakwood Beach homes at pre-storm prices. These federal funds were distributed through the HMGP, which was created in 1988 to reduce the loss of life and property from regularly recurring natural disasters by funding mitigation measures such as resident relocation and flood-proof rebuilding. The Governor's Office of Storm Recovery (GOSR), which was created in the wake of Hurricane Sandy to ensure a more coordinated and efficient disaster response, managed the funds. GOSR also manages federal funding from sources including Federal Emergency Management Agency (FEMA), Community Development Block Grant Disaster Recovery (CDBGDR), and the Department of Agriculture, as well as state resources and New York City's Build It Back program.

Buyouts targeted low to middle-income homeowners, capping payments at roughly \$729,500 for single-family homes. The state used federally administered HUD Disaster Recovery funds to cover the 25% local funding match that the HMGP requires, eliminating the need for municipalities to use their own budgets. This allowed further HMGP funds to be used for mitigation efforts like elevating homes and buffering infrastructure. To retain its tax base, the state also offered a 5% bonus for relocation within the five boroughs. All Oakwood Beach residents received the 10% bonus for residents vacating homes in high-risk zones.

A large part of the Oakwood Beach buyout's success was in the speed of its implementation, which also presented a stark contrast to city recovery programs. The state purchased the first homes within the year, while the city had not yet distributed any funds. After seeing Oakwood Beach receive aid, the nearby neighborhoods of Graham Beach, Ocean Breeze, Midwood Beach, South Beach, New Dorp Beach, Crescent Beach, Tottenville, and Great Kills organized similar buyout committees. In November 2013 Cuomo agreed to extend the buyout program to Ocean Breeze, then Graham Beach in April 2014. By way of contrast, two years following Sandy, 12,380 New York City's Build It Back projects still awaited implementation (7,800 for repair, 4,000 for elevation, and roughly 500 total rebuilds). On Staten Island, only 138 people had started reconstruction, 38 had started repair, and 400 had received reimbursements as of September 1, 2014 (5% of applications).

**Discussion.** Though almost 100% of Oakwood Beach participated in the buyout, tensions remain concerning eligibility criteria and between those who chose to stay and those who opted to leave. Eligibility for the program was not always transparent, and though the state claimed that decisions were made solely based on inundation maps, residents reported that a lower elevation home that experienced comparable flooding to a bought-out home could be passed over if the surrounding, state-defined neighborhood segment had a lower resident interest rate (Salles, 2022). Some residents with years left on a mortgage chose not to take the buyout offer as the money would go entirely to the bank. The relocation of almost an entire community also effectively erased the municipal tax base. For those who remain, basic services are incredibly unreliable. Streets are regularly flooded, potholes go unrepaired, and trash collection is sometimes skipped for weeks at a time. Buyouts also affect neighboring communities. Some homes on Mill Road adjacent to Oakwood lost \$100,000 in value as the lots across the road returned to wetland.

Responsibility for these concerns has not been claimed by either the city or the state. Those who did not take the initial state buyout offer are still eligible for another acquisition program in which homes are individually bought at pre-storm value for redevelopment, regardless of community buy-in. 107 New York City homeowners, the majority of which live on Staten Island, expressed interest, and 17 properties awaited a purchase offer in 2015. In September 2017, the city also rezoned residential areas in Oakwood Beach located near the homes bought out by the state to minimize risks for future development.

The success of managed retreat depends heavily on community-scale buy-in. Rebecca Sinclair, Director of Buyouts and Acquisitions in GOSR commented, "Part of what made Oakwood Beach, Graham Beach, and Ocean Breeze so attractive and so viable for us was that the residents approached us with an interest rate very close to 100%... When you start to purchase and bulldoze homes in a community you have to understand that the housing prices of all the homes in that community that are not part of the buyout will likely drop, so you want to make sure that you have a very high percentage participating." Communities that choose to move together may also relocate to similar areas, maintaining social bonds and support networks.

Alternatives to buyouts include rebuilding and investment in coastal defense infrastructure. Flood zone reconstruction is increasingly expensive as storms happen more frequently – eight of the ten costliest hurricanes to hit the US occurred in the last decade. The financial burden of reconstruction is also shifting from the federal government to homeowners, a disproportionate number of which live in small, mortgaged, owner-occupied homes. The National Flood Insurance Program (NFIP) supported the majority who lacked the liquidity to rebuild on their own. However, as the NFIP sustained catastrophic losses through Hurricane Katrina and other disasters, the Biggert Waters Flood Insurance Act of 2012 was introduced to further regulate flood zone construction. By authorizing insurance premium increases of up to 20% per year, homeowners are discouraged from rebuilding, and are left with no choice but to leave. Coastal defense infrastructure



projects are typically expensive and have uncertain lifespans in rapidly changing environmental conditions. In June of 2022, the House of Representatives finally passed legislation to fund a 22,700-foot seawall along Staten Island’s eastern coast, a project that has been under discussion since 2013. However, it is unclear whether it will be sufficient for a storm of Sandy’s magnitude and when it will ultimately be completed.

Managed retreat is increasingly a part of New York’s climate adaptation policy. The New York City Comprehensive Waterfront Plan increasingly refers to “land mobility” and “climate adaptation” (NYC Comprehensive Waterfront Plan). Grassroots organizations like the Oakwood Beach Buyout Committee are important models in the implementation of these policies. Properties acquired by the state through buyout will be rewilded with native grasses and berms by the Army Corps of Engineers. These areas will then be integrated in the Department of Environmental Protection’s Bluebelt program, a nature-based stormwater management system. This being said, resilient development strategies are not consistent across all of New York City, as development continues in flood-prone areas of Williamsburg, Long Island City, and Hallat’s Point. As managed retreat is also most viable in areas with high homeownership, it is unclear how the city will integrate the 60% of the population that rents.

**Future Implementation and Concluding Thoughts.** As of 2019, over 500 properties were purchased by the state, 478 of which were returned to nature. 108 were purchased through the alternative acquisition program, 101 of which were auctioned off.

The Oakwood Beach project offers a number of key lessons in implementing managed retreat policy which may be applicable to other cities considering managed retreat (Kraan et al., 2021).

### 1. Community-driven process with broad buy-in and transparency

Community-driven processes are far more successful than top-down managed retreat efforts. The Oakwood Beach Buyout Committee recommends that some meetings are open only to residents and experts providing necessary information for group consideration. They suggest that “having the opportunity to meet in private — without government officials and media — can promote more candid conversations and build relationships among community members without fear of public retribution, loss of privacy, or misrepresentation.”

Decision-making processes need to be inclusive. Offering residents active roles in the organization inspires a sense of agency and also reduces administrative burden by replacing official leaders with volunteers. Delegation of authority can also promote community cohesion, increase buy-in for the process, increase the number of people who can correct public misperceptions or misinformation, reduce negative psychological impacts by imparting a sense of control in a chaotic disaster recovery context, and expand the program’s reach.

Effective and consistent communication is key in correcting misinformation and in making sure communities are aware

of the financial and legal implications of often complex policy programs. Transparency in decision-making and eligibility is also central. This can be effected through graphical tools like maps. Zoning should also be coordinated with buyout programs so that maps are not arbitrary.

### 2. Source funding from multiple sources and ensure fast-paced buyout process

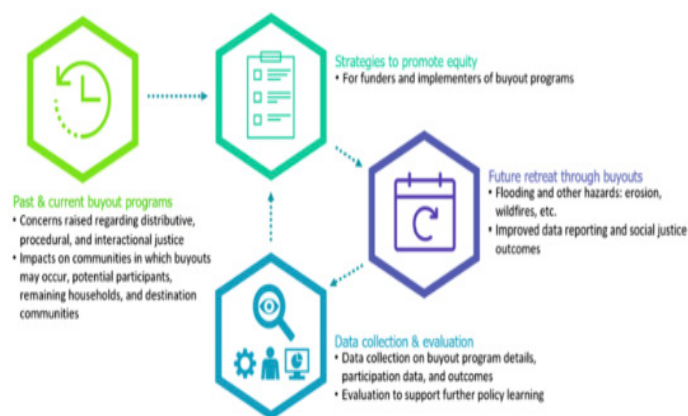
Engaging funding from multiple sources was key in expediting the buyout program and also countering fears about declining municipal tax bases. If states deploy resources to communities quickly, local governments may be more responsive with aid.

Governments are also more likely to provide funding in the immediate aftermath of a disaster. Shifting political and community sentiments can mobilize innovative responses.

### 3. Homeownership and redevelopment

Buyout programs are most effective in communities with high levels of homeownership. Community buy-in can be encouraged through processes that allow groups to determine how and where they move post-disaster. Given histories of redevelopment, gentrification, and displacement, it is also important to communicate that properties will not be redeveloped or resold.

To conclude, in promoting equity in retreat through voluntary property buyout programs, Kraan et al. (2021) point out that “to prevent the perpetuation of inequities, specific attention must be paid to how communities of color, where residents tend to own less property and property is undervalued, are treated in developing climate migration strategies.” Looking at the effects of vulnerable communities through the lens of equity and justice will be crucial to the success of future buyout programs, both in New York City, and around the world.



**Figure 2.** *Promoting equity in buyout programs*  
Source: Kraan et al., 2021

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## Additional Data

- **Gross National Income (GNI):** 80,300 USD (High Income)
  - **Population Density:** 3,199 people/km<sup>2</sup> (Staten Island)
  - **Gini Coefficient:** 41.3
  - **Human Development Index (HDI):** 0.927 (Very High)
  - **Type of Climate Intervention:** Adaptation
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