Managing the Retreat from Rising Seas

Queens, New York: Resilient Edgemere Community Plan



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Managing the Retreat from Rising Seas: Lessons and Tools from 17 Case Studies

About This Report

As seas continue to rise and disaster events and extreme weather increase in frequency and intensity, climate change is driving state and local policymakers to evaluate strategies to adapt to various risks affecting many communities. In addition to protection (e.g., hard shoreline armoring) and accommodation (e.g., elevating or flood-proofing structures) measures, coastal governments and communities are increasingly evaluating managed retreat, where appropriate, as a potential component of their comprehensive adaptation strategies. Managed retreat is the coordinated process of voluntarily and equitably relocating people, structures, and infrastructure away from vulnerable coastal areas in response to episodic or chronic threats to facilitate the transition of individual people, communities, and ecosystems (both species and habitats) inland.

The aim of managed retreat is to proactively move people, structures, and infrastructure out of harm's way before disasters occur to maximize benefits and minimize costs for communities and ecosystems. For example, policymakers may maximize opportunities for flood and risk reduction by conserving wetlands and protecting habitat migration corridors and minimize the social, psychological, and economic costs of relocation by making investments in safer, affordable housing within existing communities. This report is composed of 17 individual case studies. Each one tells a different story about how states, local governments, and communities across the country are approaching questions about managed retreat. Together, the case studies highlight how different types of legal and policy tools are being considered and implemented across a range of jurisdictions — from urban, suburban, and rural to riverine and coastal — to help support new and ongoing discussions on the subject. These case studies are intended to provide transferable lessons and potential management practices for coastal state and local policymakers evaluating managed retreat as one part of a strategy to adapt to climate change on the coast.

Collectively, these case studies present a suite, although not an exhaustive list, of legal and policy tools that can be used to facilitate managed retreat efforts. Legal and policy tools featured include: planning; hazard mitigation buyouts and open space acquisitions, as well as other acquisition tools like land swaps and reversionary interests; land use and zoning; and Transfer of Development Rights programs. The case studies also highlight various policy tradeoffs and procedural considerations necessitated by retreat decisions. Each jurisdiction is confronting different challenges and opportunities and has different, perhaps even competing, objectives for retreat. In addition, stakeholders in each of these cases are attempting to balance multiple considerations, including:

protecting coastal ecosystems and the environment; fostering community engagement and equity; preparing "receiving communities" or areas where people may voluntarily choose to relocate; and assessing public and private funding options and availability. The case studies included in this report were selected to reflect the interdisciplinary and complex nature of retreat decisions and underscore the need for comprehensive solutions and decisionmaking processes to address these challenging considerations.

Where possible, all of the case studies share a consistent organizational format to allow easier cross-comparison of strategies, processes, and takeaways:

- The Background section introduces state or local context for each case study, including the risks and hazards facing each jurisdiction and its road to considering or implementing managed retreat strategies.
- The Managed Retreat Examples section focuses on the legal and policy tools that have been designed and implemented to support managed retreat strategies on the ground.
- The **Environment** section highlights how floodplains and coastal ecosystems have been restored, conserved, and protected as a part of comprehensive managed retreat strategies to provide ecosystem and community benefits, like reducing flood risk and creating community assets such as parks and trails.
- The Community Engagement section summarizes how affected residents have been contributing to planning and decisionmaking processes for climate adaptation and managed retreat.
- The Funding section identifies how the programs, plans, and projects discussed have been funded by federal, state, and local government and private sources.

- The Next Steps section captures the anticipated future actions that jurisdictions may take in implementing these managed retreat strategies.
- The **Considerations and Lessons Learned** section concludes with the primary takeaways from each example that other coastal state and local policymakers and communities may consider when developing or implementing their own managed retreat strategies using these legal and policy tools.

The case studies in this report were informed by policymakers, practitioners, and community members leading, engaging in, or participating in the work presented in this report. No statements or opinions, however, should be attributed to any individual or organization included in the *Acknowledgements* section of this report. It is also important to note that the programs and planning processes described in each case study are ongoing and the content included in this report is current as of early 2020. Future updates about these case studies will be captured in Georgetown Climate Center's online resources on managed retreat.

These case studies were written to support Georgetown Climate Center's Managed Retreat Toolkit, which also includes additional case study examples and a deeper exploration of specific legal and policy tools for use by state and local decisionmakers, climate adaptation practitioners, and planners. For future updates about these and other case studies and the Managed Retreat Toolkit, please visit the **Managed Retreat Toolkit** and the **Adaptation Clearinghouse**.

Queens, New York: Resilient Edgemere Community Plan

Executive Summary

After Hurricane Sandy, New York City (NYC) engaged in a community-driven planning process and implemented multiple voluntary relocation projects in the Edgemere neighborhood of Queens to reduce flood risks and move people out of harm's way. In 2012, the low-lying urban neighborhood of Edgemere experienced severe wave action and storm surge from Hurricane Sandy. Widespread damage and regular tidal floods, coupled with longstanding public ownership of vacant land in the neighborhood, presented an opportunity to plan for a stronger, more resilient future. The NYC Department of Housing Preservation and Development (HPD) launched the Resilient Edgemere Community Planning Initiative in October 2015 as a collaboration between city agencies, community members, elected officials, and local organizations. The Resilient Edgemere Community Plan lays out a long-term vision for achieving a more resilient neighborhood with improved housing, transportation access, and neighborhood amenities. The plan was created in parallel with Build It Back, a citywide housing recovery program funded by the U.S. Department of Housing and Urban Development. One of the 65 distinct projects included in the plan was a "land swap" pilot project to provide buyout and relocation assistance to residents within a "Hazard Mitigation Zone" (HMZ), an area of Edgemere at risk of destructive wave action during storms. Through the land swap pilot project, Edgemere residents within a HMZ were eligible to receive a newly built, elevated home on safer ground. In exchange, residents would transfer title of their damaged, original homes to the city. The damaged homes will be demolished and the lots maintained as open space, which the plan envisions will enhance Edgemere's future flood resilience and may become part of passive recreational amenities in the future. The plan is notable for being developed through an 18-month public engagement process that placed residents, who best understand their community, at the center of an open and transparent neighborhood planning process. Resilient Edgemere can provide an example of how local governments can transition affected residents away from vulnerable areas by helping people relocate nearby and simultaneously build community resilience and help to maintain community cohesion and local tax bases.

Background

Edgemere, a waterfront community located in the New York City (NYC) borough of Queens, along the Rockaway Peninsula Barrier Island, suffered widespread damage after Hurricane Sandy. Even before Sandy, the neighborhood's low-lying geography and topography contributed to recurrent nuisance flooding and ponding from heavy rains and high tides, which is further exacerbated by sea-level rise. The city owns a significant amount of the land in Edgemere (more than 50 percent as of 2015)¹ - much of which was identified for potential investments in affordable housing and economic development opportunities as early as 1997 by the NYC Department of Housing Preservation and Development (HPD) as a part of the neighborhood's Urban Renewal Plan.² NYC HPD is the city's affordable housing agency, responsible for promoting the construction and preservation of affordable, high quality housing for low- and moderate-income families and ensuring sound management of the city's affordable housing stock and housing plans. After Hurricane Sandy, NYC HPD engaged with Edgemere's residents to create a community-driven vision for the area through a Resilient Edgemere Community Planning Initiative in 2015. Simultaneously, the city implemented a disaster recovery benefits program that implemented priority projects identified through the planning initiative. These two parallel processes resulted in the city piloting different buyout projects in Edgemere.

Managed Retreat Examples

Planning for Retreat

Significant damage from Hurricane Sandy and the city's ownership of many vacant parcels in the community that were prioritized for investment created an opportunity to combine the city's recovery efforts with a long-term vision for enhancing the quality of life for Edgemere residents. The result of this planning initiative was the Resilient Edgemere Community Plan (Resilient Edgemere or the plan).³ Resilient Edgemere is a neighborhood-scale plan that presents clearly defined goals and strategies and identifies 60 recovery projects and planned investments to be implemented over the next 10+ years to enhance the community's resilience to extreme weather and climate change. The city led an 18-month community engagement process and released the plan in spring 2017. The plan aligned the neighborhood's long-term vision with ongoing planning and recovery work, including projects funded by the city, Federal Emergency Management Agency (FEMA), U.S. Department of Housing and Urban Development (HUD), and other public and private sources.

The plan articulates four main goals with accompanying strategies for implementing those goals (informed by the Community Planning Initiative, see next section):

- 1. Protect the neighborhood from flooding.
- 2. Create resilient housing and maintain low-density feel.
- 3. Improve streets and transportation.
- 4. Increase neighborhood amenities.

Each of the goals was broken down into strategies that could be implemented. For example, goal one — protecting the neighborhood from flooding — involves strategies to strengthen Edgemere's coastline, adapt to increased flooding, create waterfront connections, and improve drainage and water quality. By crafting a clear long-term community development framework, the plan can help the city address flooding and other economic challenges experienced by the Edgemere community.

Community Engagement

Resilient Edgemere was developed through a robust Community Planning Initiative over the course of a year and involved workshops, open houses, small group meetings, and questionnaires. The initiative was led by NYC HPD in close collaboration with the NYC Department of City Planning (DCP), the NYC Mayor's Office of Housing Recovery Operations (HRO), and the NYC Mayor's Office of Recovery and Resiliency (ORR) (since mid-2019, renamed the Mayor's Office of Resiliency). By engaging directly with residents and stakeholders through the planning process, a number of problems and their impacts were identified, including flooding and ponding, the blight of vacant land, difficulties elevating homes, and poor public amenities including few sidewalks, poor street crossings, inadequate transit services, and poor beach and bay access. From May 2016 to February 2017, NYC HPD and partner agencies turned the draft strategies developed through the learning and creation phases into final strategies and projects. The Community Planning Initiative demonstrates how input from residents and stakeholders can help to inform the development of a final plan that reflects community knowledge, concerns, and long-term aspirations.

Adapting to Increased Flood Risk Through Post-Disaster Recovery Processes

To implement the plan's first goal to protect the neighborhood from flooding, the city offered voluntary post-disaster buyouts, including through land swaps, to homeowners along the low-lying waterfront. Through the planning process, the community created a long-term vision to transform this flood-prone land to a recreational open space amenity to serve residents.

The city began strengthening relationships with residents and community stakeholders through the Resilient Edgemere community engagement

Short-term Vision



Long-term Vision



Resilient Edgemere Short- and Long-Term Visions.

This drawing illustrates the short- and long-term visions for the Edgemere neighborhood in Queens, New York City that resulted from the Resilient Edgemere Community Planning Initiative.

Credit: N.Y. City Dep't of Hous. Pres. & Dev., Resilient Edgemere Community Plan 21 (2017).

process. Simultaneously, the city was implementing components of the plan through post-Sandy disaster recovery programs. The citywide Build It Back program⁴ was a federally funded housing recovery program created for homeowners, landlords, and tenants after Hurricane Sandy to allocate and manage a HUD Community Development Block Grant for Disaster Recovery (CDBG–DR).⁵ In partnership with Build It Back, NYC HPD established a Hazard Mitigation Zone (HMZ) in Edgemere's area of greatest flood risk. The HMZ was defined by the Coastal A Zone (a flood-area classification designated by FEMA for coastal areas with a one-percent or greater chance of flooding and an additional hazard of storm waves of 1.5 to 3 feet that has a higher likelihood of causing structural damage to buildings).

The city modified disaster recovery aid benefits and changed its development plan in several ways within the Edgemere HMZ. First, Build It Back applicants in the HMZ were not eligible to receive funding for in-place reconstruction or repair of their storm-damaged house. Instead, the program offered eligible homeowners a "land swap" opportunity to relocate further inland to less vulnerable city-owned properties (see next section). Second, future development on the storm-damaged, buyout sites is prohibited by federal grant requirements and is codified locally through deed restrictions. Third, where housing was planned within the HMZ, HPD will seek to amend Edgemere's current Urban Renewal Plan to designate these sites for open space uses through a public process.

Land Swaps

One unique aspect of how the Build It Back program was administered in Edgemere was that HPD led a pilot project to buyout residents in the HMZ and help them relocate upland through a "land swap" arrangement. In 2016, NYC HPD and HRO collaborated to pilot a relocation program called "Edgemere Rebuild–Relocation" for homeowners who owned substantially damaged homes within the HMZ.⁶ Through the Rebuild-Relocation program, the city would provide participants with a new, comparable replacement home on city-owned land outside of the HMZ in Edgemere through a "land swap." Land swaps are a legal tool that enable two actors - here the City of New York and private property owners in Edgemere — to exchange or trade title to their properties. In exchange for acquiring a resident's property through Rebuild-Relocation, the city would give that resident title to a city-owned property further inland (outside of the Coastal A Zone) and then construct a new home on that lot. The home and structures on a resident's original lot would then be demolished and the property converted to open space under the city's ownership. For HUD compliance purposes, the property owner's benefit is comprised of the construction costs for the new home. No funds are exchanged between the program; instead, the homeowner exchanges the storm-damaged property in a transaction with the city and receives a new home on a new property in a safer location. The city's intention behind Rebuild-Relocation was to provide a smooth and quick transition to a safer, more resilient home within Edgemere in order to maintain community ties and local tax bases.

Nonetheless, as the city implemented Rebuild-Relocation, both the city and participating homeowners encountered several challenges that made it difficult to expand the pilot on a larger scale. Specifically, due to a housing shortage and construction backlog throughout the city, residents were not able to move into their new homes quickly and remained in storm-damaged homes longer than anticipated. In addition, it proved legally and financially complicated to work with attorneys and lenders to transfer clear titles and mortgages (i.e., property titles and mortgages free of liens or other encumbrances) between the two properties. Ultimately, only three homeowners participated in Rebuild-Relocation. Other residents in Edgemere's HMZ who participated in buyouts through the Build It Back program did not relocate through the land swap pilot program.

Funding

Post-Sandy recovery efforts in Edgemere, including for the Resilient Edgemere planning process and buyouts through Build It Back, were funded through the city's CDBG–DR grant. The plan also identifies other funding sources that could be used to implement additional projects, including from FEMA and other public (U.S. Army Corps of Engineers, U.S Department of Transportation, and National Park Service) and private entities; however, funding for individual projects has yet to be determined and will need to go through a public approval process or the city will need to secure outside funding before they can be implemented.

Next Steps

The Resilient Edgemere Community Plan is viewed as a living document and demonstrates that engaging local residents can result in communitysupported solutions to complex challenges. Through effective public participation and partnership, the plan has allowed Edgemere residents to take a leading role in the development and improvement of their neighborhood - not only on resiliency, but also on other elements that improve quality of life in a neighborhood, from resilient housing to transportation access and neighborhood amenities. The city plans to continue engaging the Edgemere community as the Resilient Edgemere Community Plan is implemented to ensure that the community involvement that was a part of developing the plan is maintained. In the long-term, these resilience projects will help the community reduce coastal flood risk, improve neighborhood ecology, and provide neighborhood amenities.

Considerations and Lessons Learned

The Resilient Edgemere Community Plan can serve as a model for other planners and decisionmakers for how to work effectively and collaboratively with communities to create a shared vision for building resilience. The Resilient Edgemere planning process enabled communities to have a voice in aligning multiple objectives, programs, and projects with a long-term vision. Resilient Edgemere also serves as an example of local retreat strategies that can help people transition from areas of higher flood risk, here hazardous coastal wave action areas, to less vulnerable areas. Here, a land swap pilot project provides lessons about how governments can work with residents to enable them to remain within their existing neighborhood rather than relocating further away, which can minimize the economic, social, psychological, and other costs of retreat. In addition, the neighborhood plan aligns resiliency planning and disaster recovery with New York City's overall affordable housing and climate adaptation goals.

Other local governments and communities might consider implementing similar community-driven planning processes to set goals for post-disaster recovery when redevelopment and community transformation opportunities align with a longterm vision to enhance community resilience. Such an approach may also be useful as part of pre-disaster or proactive planning processes where a municipality is undergoing significant new development or cities similarly own a lot of blighted or abandoned properties that can support broader affordable housing and redevelopment needs. Pilot programs like Rebuild–Relocation can offer lessons for other jurisdictions helping people retreat from vulnerable areas. Land swaps are challenging where there are existing mortgages or debts; to date, there are few mortgage tools or services to facilitate a mortgage swap from one site to another. In this example, success depended on early and extensive housing and financial counseling, as well as close coordination with mortgage lenders. More broadly, Rebuild–Relocation highlights possible opportunities for local governments to proactively invest in more affordable housing that could support people moving in response to hazard events or gradual impacts from climate change, like sea-level rise, flooding, and coastal erosion. In addition, local governments and communities considering retreat can evaluate how to better align climate adaptation with housing and community development plans.

Endnotes

- 1 FAQ: FINALIZE; DEVELOPING THE PLAN, RESILIENT COMMUNITY EDGEMERE PLANNING INITIATIVE, *available at* https://www1.nyc.gov/assets/ hpd/downloads/pdf/community/overview-faq-workshop-4.pdf (last visited Dec. 9, 2019).
- 2 Urban Renewal: Edgemere, N.Y. CITY DEP'T OF HOUS. PRES. & DEV., https://www1.nyc.gov/site/hpd/community/urbanrenewal-area-details.page?areald=138 (last visited Dec. 9, 2019).
- 3 N.Y. CITY DEP'T OF HOUS. PRES. & DEV., RESILIENT EDGEMERE COMMUNITY PLAN (2017), available at https://www1.nyc.gov/assets/ hpd/downloads/pdfs/services/resilient-edgemere-report.pdf. The plan aligns with One NYC and Housing New York, both citywide plans created under Mayor Bill DeBlasio. OneNYC is a larger comprehensive citywide plan to increase the city's resilience and adapt to climate change through equitable processes, and was supported by post-disaster funding following Hurricane Sandy. Georgetown Climate Ctr., One New York: The Plan for a Strong and Just City (One NYC), ADAPTATION CLEARINGHOUSE, https:// www.adaptationclearinghouse.org/resources/one-new-york-the-plan-for-a-strong-and-just-city-one-nyc.html (last visited Nov. 11, 2019). Housing New York is a plan to create and preserve 200,000 high-quality affordable homes over 10 years to address the city's affordable housing crisis and retain the diversity and vitality of its neighborhoods. Housing New York, N.Y. CITY DEP'T OF HOUS. PRES. & DEV., https://www1.nyc.gov/site/housing/index.page (last visited Dec. 9, 2019).
- 4 Georgetown Climate Ctr., *New York City Build It Back Program*, ADAPTATION CLEARINGHOUSE, https://www. adaptationclearinghouse.org/resources/new-york-city-build-it-back-program.html (last visited Nov. 11, 2019).
- 5 Georgetown Climate Ctr., HUD Community Development Block Grant–Disaster Recovery, ADAPTATION CLEARINGHOUSE, https:// www.adaptationclearinghouse.org/resources/hud-commun ity-development-block-grant-disaster-recovery.html (last visited Nov. 11, 2019).
- 6 N.Y. CITY DEP'T OF HOUS. PRES. & DEV., RESILIENT EDGEMERE COMMUNITY PLAN 25 (2017), available at https://www1.nyc.gov/assets/ hpd/downloads/pdfs/services/resilient-edgemere-report.pdf.

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