MARITIME ECONOMY, PUBLIC ACCESS, AND RESILIENCE

A feasibility study of Staten Island's Northeast Shore

September 2021

Image Credit: Karen Imas
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EXECUTIVE SUMMARY

Delightful beaches, daily ferry commutes, great fishing, natural wetlands, lighthouses, and active piers of the working waterfront are just a few of the ways that Staten Islanders today connect to their culture as an island community. Appreciating that many neighborhoods feel like villages, residents remark on both the benefits and the challenges of the natural separations created by living on an outlying island. More of those challenges were brutally revealed during Hurricane Sandy, when destruction and fatalities hit local communities painfully hard. With those traumatic memories still fresh, many Staten Islanders are re-examining their relationship with the surrounding water, and how it contributes to shaping their lives.

Public investment in Staten Island has been ongoing, though residents often request more resources, and more attention to equity in response to gentrification. Building on the popularity of the Staten Island Ferry as both a commuting option and a tourist activity, economic development projects have spread from the St. George Ferry Terminal across the Island’s northern waterfront. On the Island’s southeast shore, hardest hit during Hurricane Sandy, agencies are building 5.3 miles of seawall, levee, and stormwater detention ponds to offer coastal protection for the future. In between these two geographies lies the northeast shore of Staten Island, our study area for this report.

Considering that stakeholders in this area of the Staten Island coast between the New Stapleton Waterfront project and Fort Wadsworth have not yet had opportunity to participate in a closer analysis of maritime opportunities and coastal protections for their community, Waterfront Alliance proposed this feasibility study supported by the New York State Regional Economic Development Council. Building on Waterfront Alliance’s experience creating Maritime Activation Plans for Brooklyn Bridge Park and Governors Island, drawing on our network of more than 1,100 Alliance Partners and the Rise to Resilience Coalition, and applying the WEDG® (Waterfront Edge Design Guidelines), Waterfront Alliance worked with Staten Islanders through this process to distill implementable and impactful maritime activation, economic development and coastal resiliency improvements to consider for the area, detailed in the following chapters.

Drawing on focus interviews with almost 30 stakeholders and a public workshop with more than 70 participants, Waterfront Alliance gathered context and recommendations to promote community-centered planning, support the economic development of the working waterfront, bring attention to resiliency needs, and increase recreational opportunities. This research is organized into the thematic areas of comprehensive, community-centered planning and advocacy; connectivity; educational, cultural, and historical programming; public open space and in-water recreation; economic and workforce development; and climate resilience and edge strategies.
Comprehensive, community-centered planning and advocacy: Staten Island’s maritime culture, perceptions of recent planning, community voices in comprehensive planning

The nautical and independent nature of living on an island has always played a role in the worlds of Staten Islanders. In particular, the working waterfront, serving the fields of cargo shipping, harbor safety, ferry transportation, dock building and maintenance, and fishing, has maintained vital services and a strong presence through the years, even as other boroughs lost similar jobs and infrastructure to New Jersey. But now as Staten Island communities seek a voice in their future, there is deep concern about gentrification displacing both residents and maritime businesses.

Most study participants called for more meaningful planning processes that include equitable outreach and participation, and more holistic planning across agencies. Project managers often have limited budgets or capacity for additional outreach, but adding or finding those opportunities not only improves and validates the planning process, it creates the lasting benefits of an educated and involved citizenry and increases the stewardship base for cultural and open spaces.

Many advocates support policy reforms that would reinforce evidence-based, equitable, community-driven frameworks that place climate front and center.

The northeast shore of Staten Island, here looking out past the Edgewater Plaza office building and the working waterfront of the Sandy Hook Pilots Association to the Verrazano Narrows Bridge, offers opportunities for both revitalization and coastal protections in the future.

Credit: Margaret Flanagan
**Connectivity:**
Balancing the transportation needs of locals and visitors, connectivity along the waterfront, connectivity to the water

Public transportation options on Staten Island focus on getting commuters to and from the St. George Ferry Terminal, often leaving cultural and educational sites figuratively off the map. Staten Islanders seek to balance welcoming visitors with preserving the character and lifestyle of their neighborhoods, but still call for improved wayfinding to cultural sites, and re-introducing innovations such as a bike share program. The launch of the new St. George NYC Ferry route opens up more opportunities for visitors to explore Staten Island.

Connectivity along the waterfront and onto the water is a challenge in northeast Staten Island. Property ownership varies greatly, from private residences and private commercial buildings to public areas and government sites controlled by various agencies, adding complexity to potential greenway or blueway proposals. At working waterfront sites, safety and security provisions understandably inhibit public access both on the grounds and in the nearby water, and truck access must be maintained on old and narrow streets.

It’s recognized that improved connectivity and transportation are integral to the advancement of any additional improvements on Staten Island’s northeast shore.

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**Educational, cultural, and historical programming:**
Organizations and opportunities for programs, challenges and connections for increasing programs, highlighting unique history

Staten Island offers rich and diverse educational, cultural, and historical programming that is underutilized. Program providers report that many Staten Islanders don’t consider the northeast shore a “destination,” making it challenging for the public to conceive of and advocate for more robust programs and increased waterfront accessibility. Yet, there is a rich tapestry of history from maritime heritage to the Underground Railroad and African-American experience that can be more visible. Meanwhile, as communities around the region face the climate crisis, the importance of environmental education will only become more relevant.

On the northeast shore, as is the case at many contemporary waterfronts, more maintenance and investment are needed to enable increased public programming on and about the coast. A lack of safe infrastructure and connectivity is compounded by a lack of trash collection, public restrooms, and other basic needs.

The Staten Island Urban Center advocates for a Maritime Education and Recreation Corridor (MERC) to be designated along the waterfront, to facilitate investment in new program sites and opportunities. Eventually, the MERC concept could incentivize educational and recreational programs that help Staten Islanders maintain connections to the water and prosper from opportunities to prepare for jobs in the maritime, environmental, and sustainability fields. Waterfront Alliance also offers youth programming for local schools to meet these goals through the Waterfront Alliance Estuary Explorers field lab.
Public open space and in-water recreation:
Improving public access, getting on the water, co-benefits of public access

Residents and local stakeholders believe that northeast Staten Island neighborhoods have limited recreational and programming opportunities and little event space; and that underutilized public and private swaths along their shores present an opportunity to correct this. But a lack of public infrastructure for physically getting in and on the water must be overcome for the area to meet its full potential as public space.

Despite these challenges, community partners have already activated the beaches and an informal access point in this stretch with kayaking, fishing, swimming, clean-ups, and more. A New York City Water Trail public access point for kayaking has been established at Buono Beach at Alice Austen House. Some locals prefer the conditions at an unofficial launch site at an unregulated parking area across from the Staten Island Railway Clifton Car Repair Shop maintenance facility.

Waterfront public spaces and public access to and on the water can provide multiple benefits for residents. Expanding active recreational infrastructure, including playgrounds and bike lanes along with kayak launches and boating, will contribute to economic benefits, building a critical mass of leisure attractions within the community and drawing newcomers. Public space opportunities can be embedded in plans to build infrastructure for resilience, such as green infrastructure doubling as green space for the community. Conversely, safe, public access to touch the water becomes even more expensive and challenging as shorelines are raised or hardened.

Economic and workforce development:
Pursuing economic potential, the working waterfront, the maritime workforce

Both maritime businesses and maritime workers have made Staten Island their home for generations. Sustaining these businesses’ economic viability while facing climate resilience challenges and land use pressures is a priority for the maritime sector. In the study area, you’ll find the working docks of the U.S. Coast Guard Boat Station, the Sandy Hook Pilots Association, and Reynolds Shipyard Corporation. Their shorelines are a City-designated Priority Marine Activity Zone, which includes some of the underutilized waterfront behind 181 Edgewater St. Elsewhere in Staten Island, some working waterfronts are protected as Significant Maritime and Industrial Areas. But the extremely high costs of dock and bulkhead maintenance, driven by permitting restrictions and complicated by historically polluted sediments in the water, place a significant burden on economic advancement for these necessary maritime service businesses.

It is sometimes challenging to find skilled workers for these jobs, even with Staten Island’s strong nautical heritage. Similar to other communities around the region, stakeholders call for strengthening the connections from school to work and providing more specialized training for maritime careers and for careers of the future, led by investments in offshore wind.
Climate resilience and edge strategies:
Cumulative effects impact the shoreline, local advocacy groups call for more information and education, progress so far

The accumulating effects of post-industrial disinvestment, storm-battered shores, and decaying waterfront infrastructure leave the northeast coast of Staten Island even further behind in preparing for future needs in coastal protection. Erosion is also a concern, particularly for the cliff top properties near Shore Acres and Fort Wadsworth. Some resilience infrastructure has been implemented by the Sandy Hook Pilots and the Coast Guard at their working waterfront sites, and Buono Beach was repaired by NYC Parks to stabilize the walkway and upper areas. Stakeholders identified the historical assets of Alice Austen House and Fort Wadsworth as at-risk sites that should be protected, including preserving public access at their beaches.

Interviewees reported that coastal resilience discussions occur more commonly around new developments, such as Urby in Stapleton, as opposed to addressing existing homes or businesses, adding to concerns about gentrification. Patchy environmental programming at community waterfronts can’t overcome the general lack of public understanding of the significant investments that will be necessary to increase resilience against sea level rise. Study participants called for more community organizers and elected leaders to greatly amplify these issues. Though some other communities report resilience planning fatigue, this was not expressed in our interviews, and instead, participants called for increased environmental education and information for residents on the northeast shore.

New York City’s new Zoning for Coastal Flood Resiliency, adopted in 2021, is changing the conversation. This law will offer communities a stronger role and additional options for meeting the crisis of climate change.

Waterfront Alliance supports many of these efforts through the Rise to Resilience Coalition, which includes more than 100 organizations collectively calling on our federal, state, and local governments to make building climate resilience an urgent priority. Waterfront Alliance’s WEDG ® (Waterfront Edge Design Guidelines) program also supports communities in advocating for more resilient and equitable waterfronts through industry-vetted design guidelines. Specific project recommendations follow, and specific WEDG credits are included in the following chapters.
WATERFRONT EDGE DESIGN GUIDELINES STRATEGIES

WEDG (Waterfront Edge Design Guidelines) is the gold standard for waterfront resilience and risk reduction. It also maximizes the benefits for ecology and access by inspiring innovation at the water’s edge. WEDG, a science-based voluntary rating system and set of guidelines, is a tool for designers, developers, risk and financial professionals, students and educators, as well as community advocates. Throughout this report, WEDG credits are referenced as guidance for planning for intricate ecosystems, overlapping jurisdictions, and complex waterfront design. In the report study area, Sandy Hooks Pilots Association is a WEDG-verified project. wedg.waterfrontalliance.org

Increasing access onto the water will strengthen both communities and economies.
Credit: Margaret Flanagan
## RECOMMENDATIONS:

### NEAR TERM

- Activate local representatives early.
- Clarify the process for the public and seek project input early and often.
- Target the business community.

### MID TERM

- Redouble effort to reach missing constituents.
- Use creative engagement techniques.

### LONG TERM

- Require landowners and developers to be accountable to community feedback.
- Government can provide additional supports.

### 1b. PLANNING

- Add signage to help people reach the waterfront.
- Enlist transportation service employees to promote the waterfront.

### 2b. CONNECTIVITY

- Initiate a study of Edgewater and Front Streets.
- Allow occasional public access to commercial maritime sites.
- Elevate community connections and coordinate with nearby projects.
- Reintroduce bike share programs.

### 3b. PROGRAMMING

- Promote interest in a Maritime Education and Recreation Corridor (MERC).
- Offer additional community education on climate change and specific ways to increase resilience.
- Enhance public programming at Fort Wadsworth.

- Highlight historic sites with new markers.
- Increase environmental education programs for youth and the public.

- Build new public program infrastructure.
- Create new public programs at existing venues. Consider a new middle school at Fort Wadsworth.
### RECOMMENDATIONS:

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#### 4b. ACCESS

- Increase funding for NYC Parks.
- Ensure that water access points are preserved and maintained as resilience projects go forward.
- Center equity in every conversation.
- Transfer jurisdiction of City owned waterfront property, such as the waterfront parking lot by Clifton Station, as dedicated open space.
- Strengthen requirements to build and maintain public access onto the water.
- Induce or incentivize private waterfront property owners to provide public access onto the water, particularly between 135 and 191 Edgewater St.

#### 5b. ECONOMICS

- Maximize local, social and cultural resources.
- Make waterfront-sensitive transportation and public space investments.
- Promote Staten Island to visitors and tourists.
- Support maintenance and resilience of the waterfront.
- Add active public space.
- Expand maritime experiences, education, and training opportunities.
- Preserve deep water at piers.
- Improve procedures or even change legislation to better facilitate development and maintenance of commercial waterfront businesses.
- Electrify the waterfront for sustainability.

#### 6b. RESILIENCE

- Increase public education about coastal resilience.
- Maximize the use of nature-based resilience measures.
- Face the problem of erosion.
- Encourage design guidelines and resilience retrofits across public and private properties.
- Add more resilience infrastructure on Staten Island.
- Change regulatory guidelines and planning processes to build better resilience infrastructure.
- Consider limiting density in the flood plain.
CHAPTER ONE
Comprehensive, community-centered planning and advocacy

1a. BACKGROUND

Staten Island’s maritime culture
Explorer Giovanni da Verrazzano anchored in New York Harbor centuries ago, but until the bridge bearing his name was completed in 1964, Staten Island remained physically disconnected from the rest of New York City. Those real and lasting island conditions have nurtured a unique identity and maritime-infused culture embraced by Staten Islanders today.

Like the rest of the city, the waterfronts of Staten Island have evolved through epochs, from natural shorelines, to cottage industry fishing and mills, to trading and transportation, to industrialization and defense, to disuse and decay, to the revitalization of today. Through it all, Staten Island’s nautical traditions and working waterfront have maintained vital services and a strong presence. Now as these Staten Island communities seek a voice in their future, there is a desire for comprehensive planning, considering climate risk and economic viability, as well as gentrification displacing longtime residents and businesses along the coast.

Island perceptions of recent planning
In workshops and stakeholder outreach, Staten Islanders report that unfinished or seemingly disconnected plans and development ventures, such as the Staten Island Wheel waterfront entertainment center, re-enforce perceptions that new zoning and projects may not reflect community needs. To be sure, design feedback from the community has been incorporated into projects such as Urby’s new shoreline residences in Stapleton and the Bay Street Corridor Rezoning, but Staten Islanders interviewed still feel that communication could be improved and that greater care could be taken with small businesses.

Echoing cries from across the city, residents question the sometimes slow wait for rebuilding and improvements in response to Hurricane Sandy, and want to see investment in utilities and infrastructure accompany the residential units opening. They perceive a disconnect in avoidance of hazards in the flood plain, where so much residential opportunity is focused, as the City pursues a robust housing agenda. They also seek to curtail displacement of residents and small businesses.

For locals trying to be involved in their community and its future, the process of urban planning can seem like a confusing alphabet soup, with a mysterious language of acronyms and technical vocabulary. Residents complain of meeting fatigue, as numerous projects host workshops or visioning sessions, without seeming to accumulate progress on consistent issues. Some participants feel they are repeating themselves time after time, and are concerned that information is not being shared across city agencies.

“We’re seeing development that celebrates this community’s nautical character, but lack of more meaningful opportunities to sustain it. We have fewer places to boat, fish, and swim, and the remaining marine businesses are threatened by displacement. It’s maritime gentrification.” Kelly Vilar, CEO, Staten Island Urban Center.
CHAPTER ONE

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Community voices in comprehensive planning
Our study area includes both private and publicly owned waterfront, adding complexity to efforts to engage community members. Investing in outreach, however, not only improves and validates the planning process, it creates the lasting benefits of an educated and involved citizenry and increases the stewardship base for cultural and open spaces. Community feedback is essential to fully grasping relevant connections for a proposed project, and while local organizations and the Community Board work hard to expand participation, they also frequently call for more holistic planning.

The New York City Council has is considering local law to amend the New York City charter to require a comprehensive long-term plan (Intro 2186). Many advocates support this call for an evidence-based, equitable, community-driven framework that places climate front and center. Recommended amendments to this legislation include centering climate resilience and equity in decision-making, ensuring sufficient community engagement and empowerment, and prompting interagency coordination in the distribution of capital resources.

1b. RECOMMENDATIONS TO INCREASE COMPREHENSIVE, COMMUNITY-CENTERED PLANNING AND ADVOCACY

Near Term

Activate local representatives early.
Invite the Borough President, City Council Member, and Community Board to learn about all land-use proposals from the beginning, and ensure that they are aware of best practice guidance for waterfront development from programs such as Waterfront Edge Design Guidelines (WEDG) and the city’s recent changes to zoning through Zoning for Coastal Flood Resiliency. Urge them to share public information through their channels. Ask community board members to loop in local business people and working waterfront representatives. Waterfront Alliance’s recent WEDG Pledge campaign revealed a strong and intensifying public desire for proactive resiliency planning.

Clarify the process for the public and seek project input early and often.
Private developers and city agencies should keep the same community liaison throughout the project if possible, to offer a consistent point of contact for the community. Review other city agency efforts in the same region in advance to understand local concerns. Explain mandatory review procedures or permits and provide a glossary that includes acronym definitions. Give context for what step of the overall process is current. Be transparent about funding and incentives. Acknowledge and analyze infrastructure needs in light of community-wide sustainability and resilience. Go beyond the requirements to reach out to the community.

Target the business community discerningly.
Since small- and mid-size business owners and managers are usually fairly busy, use appropriately targeted communications such as social media and flyers to engage local shops. Chambers of Commerce and BIDs are excellent resources for connecting with civic-minded business people, who also may help create a communications bridge between public planning and private landowners.
Redouble effort to reach missing constituents. Social silos happen, and it’s not unusual to see mostly the same group of people at meetings. Increasing mass outreach may not necessarily get through to hard-to-reach residents and a certain committee meeting may not necessarily reflect the views of the wider community. Particularly to ensure equity, consider who might be absent from Community Board or Council Member contact lists, or not be invited to the mike at meetings. Identify hyper-local leaders from clubs, faith groups, or parent associations, for example, and specifically and proactively make them aware of the coming project. Cultivate disparate local organizers to help spread the word; don’t rely on community boards alone. Meet groups and individuals where they are.

Think creatively about engagement techniques. Animated videos and illustrated posters add to a public awareness campaign. Social media and e-blasts are part of the robust community engagement that local citizens call for. Translation for workshop materials is critical, as is keeping community members updated on progress. Innovative partnerships can empower the community, such as Brooklyn Art Incubator’s Art for Community Transformation (ACT) program, in which stakeholders are matched with artists to develop a sketch of their input for a project or plan. This produces meeting visuals that are designed by locals, making a meaningful and powerful addition to typical planning presentations, in which the images are usually designed by visiting professionals. (See chapter 4 for this study’s ACT concept design.)

“The waterfront between St. George Ferry Terminal and Fort Wadsworth encapsulates many of the relationships that the city has with its waterfront: working waterfront components, passive recreation, natural shoreline, residential areas, recent development such as the Sandy Hook Pilots building, and areas with forthcoming esplanade investments, along with sections of the waterfront ripe for future planning and visioning.” – Max Taffet, Vice President, PortNYC Planning, New York City Economic Development Corporation.
CHAPTER ONE
Comprehensive, community-centered planning and advocacy

Long Term

Require landowners and developers to be accountable to community feedback.
While professional education programs for architects (such as WEDG), government zoning, and incentives for developers promote climate resilience and public access on the waterfront, even stronger guidelines are needed when calling for community benefits, and to ensure that investments authentically support the values and needs of the community. A capital and land use process that prioritizes wide public input at the earliest planning stages (before rezoning or ULURP plans are “baked”) will involve a significant advancement of the timeline for public comments compared to current requirements, and political will to match, but will yield more equitable engagement around resilience and public access.

Government can provide additional supports.
Particularly when working with small landowners or builders, City agencies should recognize the burden that navigating land use and permitting systems can become and offer technical assistance for both the process and for new initiatives such as resilience mandates. Federal, state, and city government representatives should present a local perspective on sweeping, multi-year projects and illuminate short-term benefits for the community. At all levels, expedited permitting and meaningful incentives for shoreline design co-benefits or retrofits could be helpful. Provisions in the City’s new Zoning for Coastal Flood Resiliency (ZCFR) can guide improved shoreline design and building retrofits, and as a next step, a program of City loans and grants are needed to ensure equitable, widespread implementation. The NYC Department of Buildings can continue to prepare for increases in the number and nuances of permits, and seek efficiencies to expedite permits. ZCFR will encourage resiliency in current and future neighborhoods at risk of flooding. New and rehabbed buildings in areas that are expected to have a one percent chance of flooding by 2050 are now allowed to meet or exceed flood-resistant construction standards. The zoning will also support long-term and more resilient designs by allowing building owners to raise their structures and achieve a better floorplan. Additionally, incremental retrofits will allow buildings to adapt to a changing climate, including by permitting the elevation or relocation of mechanical, electrical, and plumbing equipment above the height of floodwaters. These improvements are welcome, and particularly to uphold equity, an important next step is working on how to fund them.

“There is a lot of opportunity [for the waterfront] that hasn’t come to fruition, which is frustrating for residents. There are a lot of starts and stops [with development projects]. Why aren’t there, say, more restaurants on the waterfront, or more access, considering the views alone?” said Linda Baran, President and CEO, Staten Island Chamber of Commerce.
CHAPTER ONE
Comprehensive, community-centered planning and advocacy

1c. WEDG STRATEGIES AND CREDITS TO INCREASE COMPREHENSIVE, COMMUNITY-CENTERED PLANNING AND ADVOCACY

Credit 0.2 – Provide an analysis of the project site to inform a design approach in line with site conditions and a baseline from which to measure performance over time.

Credit 0.3 – Engage community stakeholders in the vision, design, and implementation of the project to create a welcoming and equitable waterfront for all.

Category 2 – Make waterfronts more accessible, inspiring, and welcoming to all by engaging diverse community stakeholders in the design of waterfront projects.

For further details: wedg.waterfrontalliance.org
CHAPTER TWO
Connectivity

2a. BACKGROUND

Balancing the transportation needs of locals and visitors
On Staten Island’s northeast shore, the industrial archeology of old piers and shoreline rail tracks attest that the waterfront has always helped to keep the island moving. Today, public transportation options largely funnel to and from St. George where the Staten Island Ferry and NYC Ferry operate, and private cars are widely used. Pedestrian and cyclist options keep growing, though discontinuation of the dockless bike share program piloted by Lime in 2018-2019 was a disappointment to locals eager to expand transportation and waterfront access. And while improving safety and transportation is a widespread concern, Staten Islanders seek to balance welcoming visitors with preserving the character and lifestyle of their neighborhoods.

Connectivity along the waterfront
On the northeast shore, roads that closely parallel the coastline, including Edgewater and Front Streets, are narrow, with deteriorating asphalt. They are frequented by trucks serving waterfront industries and drivers trying to move faster than inland traffic. In some cases, the surrounding sidewalks do not support foot traffic well. The Staten Island Railway (SIR), a light transit line run by the Metropolitan Transit Authority (MTA), serves part of the study stretch, and nearby Bay Street is a major corridor, but there is little signage to help travelers discover waterfront cultural and programmatic sites. Property ownership varies greatly, from private residences and private commercial buildings to public areas and government sites controlled by various agencies. This adds complexity to achieving connectivity along the waterfront. Involving private property owners in community-wide improvements is particularly challenging.

Connectivity to the water
Along the northeast shore, there are few places to simply touch the water or for recreational boaters to dock. While marine operators such as Sandy Hook Pilots Association and the U.S. Coast Guard maintain active piers, safety and security provisions understandably inhibit public access both on the grounds and in the nearby water. To stay connected to the community, these working waterfront sites are sometimes able to arrange guided tours. The presence of active industrial maritime uses means connectivity will probably not be linear.

Moreover, near-shore waters are littered with the remains of old piers, tracks, and boulders, which impede launching a small boat. A public access point for kayaking has been established at Buono Beach at Alice Austen House, but some locals prefer the conditions at an unofficial launch site on Front Street across from the SIR Clifton Car Shops maintenance facility. Public space necessities such as trash bins and restrooms are minimal. Fences block the waterfront in many places, preventing a water view. Most cross streets in the study area end at small private lots, eliminating typical land use tools for increasing public access to the waterfront.

“One’s access to a park is only as good as their ability to get there safely,” said Emily Walker, former Director of Outreach and Programs at New Yorkers for Parks (NY4P), and Executive Director of the Broadway Mall Association.
CHAPTER TWO
Connectivity

2b. RECOMMENDATIONS TO INCREASE CONNECTIVITY

Near Term

Add signage to help people reach the waterfront.
At transportation hubs and on pivotal street corners, particularly along the Bay Street corridor, improved wayfinding would help people find the waterfront and explore the cultural and programming sites there. Install information kiosks similar to LinkNYC. This will benefit Staten Islanders as well as tourists, as many locals have been disconnected from the waterfront. More visitors will boost local businesses.

Enlist transportation employees to promote the waterfront.
Ensure employees at the St. George Ferry Terminal, the SIR, and on Bay Street bus routes can provide directions to the waterfront, if only pointing to new signage.

Mid Term

Initiate a study of Edgewater and Front Streets.
A New York City Department of Transportation study of Edgewater and Front Streets could seek basic improvements for pedestrians and cyclists while maintaining the flow of vehicle traffic necessary for commercial businesses. The narrow streets make this challenging, but seeking patterns in timing and use might allow flexible, shared curb space to alternate among delivery loading zones, bicycle use, or expanded pedestrian walkways. The need for truck and vehicle access on a 24-hour basis is particularly acute at waterfront maritime businesses.

Allow occasional public access to commercial maritime sites.
Maritime businesses could continue to allow planned, controlled access to their waterfront sites for education and community engagement. Businesses are likely to encounter insurance conditions, so participants may be required to sign waivers, but guided tours provide a shared experience that significantly strengthens a commercial waterfront’s connectivity with the community. The WEDG-certified SIMS recyclables recovery facility in Brooklyn provides a model for this type of programming, and local nonprofits such as the Staten Island Urban Center and regional advocates such as Working Harbor Committee are just two of many possible public program managers to help.
Connectivity

Elevate community connections and coordinate with nearby projects.
Plan proactively in cooperation with renewal projects adjacent to our study area, such as the Bay Street Corridor Rezoning and the New Stapleton Waterfront. This would ensure that transportation options, and the business development they can bring, extend through local cross streets to the northeast shore. More importantly, residents can offer a keen sense of helpful connections or unforeseen consequences to ensure equity and success in transportation planning.

Reintroduce bike share programs.
A number of study participants enthusiastically look forward to bike sharing to help both locals and visitors with transportation options and access to the waterfront. Fort Wadsworth, a former military base turned National Park, is a rich cultural and recreational destination where the past dockless bike share pilot, operated jointly by JUMP and Lime in 2019, successfully enabled significantly better connectivity and access. A new operator, Beryl, was selected to reinstate a bike share program in Staten Island, but has since withdrawn those plans. As of this writing, Staten Island remains the only borough without any bike share program.

“The transportation is [one of the] largest barriers on the island [for waterfront access], especially from a diversity and inclusion standpoint,” said Victoria Munro, Executive Director, Alice Austen House.

The former Torpedo Wharf at Battery Weed in Fort Wadsworth would take much investment to become a regular ferry stop, but what a great opportunity for connecting cultural resources more directly to the transportation grid!
Credit: Margaret Flanagan
CHAPTER TWO
Connectivity

Long Term

Create a greenway and bikeway that parallels the waterfront.
Waterfront greenways have taken off across all corners of New York City and stakeholders called for greater greenway connectivity on the northeast shore of Staten Island. A citywide coalition is calling for NYC Parks, the NYC Department of Transportation, and the NYC Economic Development Corporation to prioritize projects and commit to a citywide greenways master plan. In this part of Staten Island, as in other areas, however, practical details would necessitate compromise. Narrow streets would require intensive community engagement about repurposing existing roadway space. In this area, a large number of waterfront property parcels are privately owned, making greenway easements difficult to piece together. Due to maritime security, public throughways would have to run on the inland side of working waterfronts, similar to the Brooklyn Waterfront Greenway on the street side of the shipping facility in Red Hook, Brooklyn. The coast near the Verrazzano-Narrows Bridge rises to a high cliff, leaving no room along the water’s edge. It will take creative work-arounds to achieve the vision of a dedicated bikeway and walkway along the whole northeast coast, from ferry to fort, but it is an inspiring vision.

Add ferry service to Fort Wadsworth.
While the bike share program mentioned above is easier to implement, Fort Wadsworth could also be served by ferry, if challenges with infrastructure and economics can be solved. The framework of a pier still remains at the park’s waterfront called Battery Weed, but rebuilding that pier and contracting a ferry service would be extremely costly. Economy of scale might be possible if a service connected all the waterfront National Parks around the harbor—and what an amenity that would be! Typically, however, this kind of routing does not draw enough ridership to maintain low-enough ticket prices to become a realistic transportation option, though subsidies can help. The northeast shore of Staten Island is not likely to receive the density of tourist transportation seen around Manhattan, and residents are not likely to want that much congestion. However, special event ferry service or weekend only trips are possible first steps to connecting more people with program days at the park. Considering examples from events at Randalls Island or Yankee Stadium, these special occasion ferry ticket prices can range $25–$35 one way.

2c. WEDG STRATEGIES AND CREDITS TO INCREASE CONNECTIVITY

Credit 0.2 - Provide an analysis of the project site to inform a design approach in line with site conditions and a baseline from which to measure performance over time.

Credit 2.6 - Increase connectivity of green and blue spaces along the waterfront to promote physical activity, health and wellbeing, and encourage non-motorized transportation options.
"If residents and tourists can’t get around by biking, walking, or riding the bus, cities are limiting tourism, investment, and street activation opportunities," said Rose Uscianowski, Staten Island organizer, Transportation Alternatives.
CHAPTER THREE
Educational, cultural, and historical programming

3a. BACKGROUND

Organizations and opportunities for programs
With the wide diversity and deep heritage of the metropolitan region, it’s no wonder that Staten Island offers a host of educational, cultural, and historical programming. Across Staten Island, you can find long-lived cultural sites and institutions such as The Staten Island Museum, Historic Richmond Town, The Conference House, and Snug Harbor, while awareness continues to grow about sites of African American history, such as Sandy Ground and Elliotville. Along the coast east of the St. George ferry terminal, revitalization is already in progress and reflected by expanded programming at the National Lighthouse Museum and Staten Island Arts’ ArtSpace. Just inland, organizations such as the Panafrican Cultural and Training Center, The Italian Cultural Foundation at Casa Belvedere, and the Sri Lankan Art & Cultural Museum offer a taste of the borough’s diversity.

In the study area on the northeast shore, two important historic sites regularly offer programming on the waterfront. The National Park Service’s Fort Wadsworth was part of the harbor protection system built in the era of the War of 1812. Much of the site now is public park with ranger-led activities, but some of the buildings remain as headquarters for the regional sector of the U.S. Coast Guard. Nearby, Alice Austen House is the historic home of one of the first female photographers in the region, and her family’s house and her collection of work offer insights into the development of the city and societal issues spanning the late 19th and early 20th centuries. Working waterfront sites in the area, such as the U.S. Coast Guard and the Sandy Hook Pilots Association, have found ways to offer guided educational tours while maintaining necessary security standards.

“Staten Island could position itself as a center for maritime education, because there are so many uses of the waterfront and the ferry is the major mode of transportation,” said Kelly Vilar, Staten Island Urban Center.

“Knowledge is truly powerful. It is important to create an environment that informs Staten Islanders about its rich history. In some cases people who live in the community may not know about its rich history. The same history that can serve as a vehicle to bridge the divides of cultures, communities, and build friends, and neighbors,” said Dr. Demetrius Carolina, Executive Director, Central Family Life Center. Dr. Demetrius Carolina
CHAPTER THREE
Educational, cultural, and historical programming

Challenges and connections for increasing programs
During interviews for this report, a number of local stakeholders expressed the desire for increased environmental education programs that would augment existing nature activities, such as the Horseshoe Crab Walk led by National Park Service rangers at Fort Wadsworth. The Billion Oyster Project designs educational opportunities around the restoration of this keystone species in our waters, and supports a number of partner schools and sites around Staten Island, though none in this study area, yet! As communities around the region face the climate crisis, discussed in more detail in a following chapter, the importance of community-focused environmental education will only become more relevant.

One of the many tragic impacts of Hurricane Sandy on Staten Island was the ultimate destruction of the Cromwell Recreation Center, a beloved pool and program facility operated by NYC Parks on a pier relatively close to the St. George ferry terminal. Cromwell offered opportunities for water-focused engagement and education that are sorely missed by locals, but rebuilding the pier and structure was prohibitive. Drawing on the lost benefits of Cromwell, the Staten Island Urban Center is now advocating for a Maritime Education and Recreation Corridor (MERC) to be designated along the waterfront, to facilitate new program sites and opportunities. Eventually, the MERC concept could incentivize educational and recreational programs that help Staten Islanders maintain connections to the water and prosper from opportunities to prepare for jobs in the maritime, environmental, and sustainability fields.

The northeast shore of Staten Island, where the shoreline is close to sea level, includes both active and abandoned commercial maritime and industrial waterfront sites that offer salty stories for program inspiration. Near the Verrazano Narrows, the shoreline rises to a high cliff bordered by narrow beaches, harkening to the glacial moraine geology that shaped our land masses millennia ago, and providing connections for nature-based programming. Whatever the content, increasing programmatic opportunities go hand in hand with improved connectivity and transportation (Chapter 2) and improved waterfront access (Chapter 4), and will help drive improved workforce and economic opportunities (Chapter 5).
CHAPTER THREE
Educational, cultural, and historical programming

3b. RECOMMENDATIONS TO INCREASE PROGRAMMING

Near Term

Promote interest in a Maritime Education and Recreation Corridor (MERC).
Bring together existing program providers to coordinate communications and scheduling around current programs to pilot the concept. Create a hashtag or logo for increasing public familiarity with the MERC. Highlight Staten Island’s maritime history and ecosystem at school; many local and citywide partners, including Waterfront Alliance and those described above, offer labs, residencies, and programs to help. It’s important to recognize that certain steps could still be a challenge for a local nonprofit or community committee, which is usually composed of volunteers and operated on a minimal budget.

Offer additional community education on climate change and specific ways to increase resilience.
There are a number of community-based and environmental justice organizations that could help with hosting and outreach of climate response workshops, but not only for advocacy for in order to connect the dots to local workforce and career pathway opportunities. Programs should be explicit about workforce connections to professions such as offshore wind and green infrastructure.

Enhance public programming at Fort Wadsworth.
This under-appreciated National Park features fascinating historic fortifications and magnificent views of the harbor and narrows that it was built to defend. Work with the National Park Service to create and promote more programs about the role of this waterfront in supporting harbor defense through World War II.

Mid Term

Highlight historic sites with new markers.
Add cultural, maritime, and historic markers along the northeast shore and create walking, bike, and audio tours to connect and highlight important historic sites. Increase public art on the waterfront and incorporate it in tours. Seek additional sites and educational opportunities that acknowledge the contributions of African Americans on the Island. Celebrate the history of Staten Island’s Pouch Terminal, a former intermodal shipping facility on the northeast shore, similar to Bush Terminal Park in Brooklyn.

Increase environmental education programs for youth and the public.
Add natural history markers that highlight the unique features of the bluff at the Verrazzano Narrows, which may be one of the only unaltered geologic landforms left in the city. Both Fort Wadsworth, managed by the National Park Service, and Von Briesen Park, managed by the New York City Parks Department, offer public space on the cliff top for programming. Down at shore level, solve insurance concerns to activate more beaches and informal water access points for education.
CHAPTER THREE
Educational, cultural, and historical programming

Long Term

Build new public program infrastructure.
A new waterfront community center or new environmental center could anchor the MERC. In the study area, sites with the best potential are under private ownership, but several government-managed properties rank a close second. In recent years, new developments have adhered to community benefit agreements that allocate building space for community use. See chapter one for critical engagement and planning steps to ensure that any investments prioritize authentic community needs. (Potential program lead: NYC Parks or a private developer’s community benefit agreement.)

Create new public programs at existing venues.
Add a visitor’s center at Alice Austen House to increase program options and capacity. (Potential program lead: Alice Austen House or NYC Parks.) Active working waterfront sites such as the U.S. Coast Guard Boat Station and the Sandy Hook Pilots Association could supplement guided tours with a secure visitors gallery. The WEDG-certified Sims Materials Recovery Facility in Brooklyn has successfully designed a visitors’ center and a public path to create educational opportunities about their critical, but behind the scenes, work. (Potential program lead: commercial property owners.)

Consider a new middle school at Fort Wadsworth.
Revisit earlier scoping that proposed opening a harbor-focused public middle school at Fort Wadsworth. (Potential program lead: School Construction Authority.)

3c. WEDG STRATEGIES AND CREDITS TO INCREASE PROGRAMMING

Credit 0.3 - Engage community stakeholders in the vision, design, and implementation of the project to create a welcoming and equitable waterfront for all.

Credit 2.3 - Provide robust programming opportunities to enhance the historical, cultural, and environmental context, promote stewardship and build diverse community ownership.

Credit 2.7 - Enable people to safely and directly access and interact with the water to enhance human wellbeing and promote stewardship of the waterways.

Credit 4.13 - Expand capacity for tracking, monitoring, and evaluating waterfront areas and contribute to a broader body of knowledge about waterfront issues and best practices.
CHAPTER FOUR
Public open space and in-water recreation

4a. BACKGROUND

Improving public access
Since the indigenous Lenape ventured out in canoes, people have been paddling in these estuarine waters for thousands of years. You can still touch the water along the northeast shore of Staten Island in some places, but like many contemporary waterfronts, more maintenance and investment are needed. While community stewards have been able to activate the waterfront in some areas, they can be limited by the need for additional facilities and public infrastructure, leading to questions of equity. Whether the shoreline is under the authority of a government agency or is privately owned, the lack of continuity makes larger investments more challenging. Maintaining access to the water does come with costs, and many stakeholders feel the Staten Island community is underserved and look to the City to make investments in public waterfronts.

Public access can be improved overall by reducing physical barriers, ensuring affordability of experiences, providing amenities, and creating shaded areas, as well as passive and active recreation opportunities with low-cost, rentable equipment. More specifically, improvements could include additional safe, purpose-built get-downs to the water, trash cans and sanitation service at access points, and facilities like public restrooms and program storage containers. Certain parts of the waterfront are permanent security zones, understandably restricting the public around essential maritime infrastructure, but there’s plenty of underutilized waterfront as well. Since the study area is impacted by combined sewer overflows (CSOs), it’s also important to maintain positive momentum on improved water quality. Program providers report that many Staten Islanders don’t consider the northeast shore a “destination,” making it challenging for the public to conceive of and advocate for more programs and access.

Pass through the parking stretch along Front St. across from the SIR Clifton Car Repair Shop railway maintenance facility, and emerge on a pebble beach that’s a popular informal access point, frequently used for fishing and kayaking. Credit: Margaret Flanagan
CHAPTER FOUR
Public open space and in-water recreation

Getting on the water
Challenges to physically get in and on the water along the northeast shore of Staten Island must be overcome for the area to meet its full potential for public space. Despite these challenges, community partners have already activated the beaches and an informal access point in this stretch with kayaking, fishing, swimming, clean-ups, and more. These active sites include:

- Buono Beach at Alice Austen House, 2 Hylan Boulevard
  - This beach is on the New York City Water Trail map, and is stewarded by staff from the historic Alice Austen House and the New York City Department of Parks & Recreation (NYC Parks). The tidal zone is quite rocky, which limits public kayak programs and educational in-water programs, but other activities on this beautiful stretch, such as fishing and picnicking, often take place.

- Fort Wadsworth beaches near Camp Gateway and at Battery Weed, 210 New York Avenue
  - The National Park Service manages public recreation at Fort Wadsworth and has offered programs at the Fort’s most southern beach, near Camp Gateway (former Seabee Park), contiguous with City Parks beaches on Staten Island’s south shore. There is also a small beach on the opposite, inland side of the Narrows, on the Fort’s northeast coast at Battery Weed. Trails are open here, but resources and considerations have not yet aligned to formally activate this additional beach.

- Informal access at the roadside waterfront across Front St. from the SIR Clifton Car Repairs Shop maintenance facility
  - City agencies have long struggled to productively manage this narrow strip of waterfront along Front Street shoreside of the SIR Clifton rail maintenance shop. Historically, underutilized waterfronts similar to this have been placed under the city’s Department of Small Business Services and Department of Citywide Administrative Services, and ultimately a variety of agencies contribute and cooperate as revitalization efforts are proposed and progress. at one point under the authority of the New York City Department of City Administrative Services (DCAS). Though it is not an official park or water trail site, frequently locals pull over to park and to access the water for kayaking and fishing. Guides from Kayak Staten Island prefer this launch site for programs on the northeast shore, and use the nearby address of 777 Front St. when planning with the public using navigation apps.

- Reduced access between 145 and 191 Edgewater Street
  - These addresses are private property—old waterfront warehouses behind a fence and clustered around a dock basin that still shelters a few small boats, but is not actively being preserved for maritime use. Small boat docks and marinas are the most challenging and costly recreational infrastructure to maintain or expand in current times, making this boating access highly endangered to be lost if the property is redeveloped solely guided by the open market, especially with current trends in up-zoning.

Learn more about these water access points in our chapter of case studies.

“The ability for New Yorkers to directly interact with their coastline will engender a respect for the waterfronts and the fact that this is a coastal city,” said Emily Walker, former Director of Outreach and Programs at NY4P, and Executive Director of the Broadway Mall Association.
CHAPTER FOUR
Public open space and in-water recreation

Co-benefits of public access
Residents say that northeast Staten Island neighborhoods have limited recreational and programming opportunities and little event space; and that underutilized public and private swaths along their shores present an opportunity to correct this. New Yorkers for Parks (NY4P), an independent non-profit organization championing quality open space for all New Yorkers, provides data that illustrates these conditions.

Their 2021 Open Space Profile for this area ranks it 55 out of 59 community boards when assessing the number of residents living within a five-minute walk of a park.

Waterfront public spaces and public access to and on the water can provide multiple benefits for residents, including physical activity, a new understanding of the environment, and new recreational hobbies or introductions to potential career paths. When the natural features of coastal habitats are upgraded, the result is often improved flood protection for waterfront communities. Expanding active recreational infrastructure, including playgrounds and bike lanes along with kayak launches and boating, will contribute to economic benefits, building a critical mass of leisure attractions within the community and drawing newcomers. Public space opportunities can be embedded in plans to build infrastructure for resilience, such as green infrastructure doubling as green space for the community. Conversely, safe, public access to touch the water becomes even more expensive and challenging as shorelines are raised or hardened. In order to preserve the harbor as public open space, water access should be required to be added and maintained as resilience initiatives develop.

Additional opportunities for programming could be developed at this Battery Weed beach at Fort Wadsworth. Credit: Margaret Flanagan
CHAPTER FOUR
Public open space and in-water recreation

4b. RECOMMENDATIONS TO INCREASE PUBLIC SPACE AND IN-WATER ACCESS

Near Term

Increase funding for NYC Parks.
NY4P’s Play Fair for Parks campaign is a multi-year advocacy effort focused on the NYC Parks budget, which in the past has been funded at approximately 0.5% of the total City budget, and was drastically cut during the Covid 19 crisis. By comparison, most major U.S. cities dedicate 1-2% of their city budget to parks. As of summer 2021, this advocacy has restored the Parks budget to close to pre-pandemic levels. Waterfront Alliance is a member of the Play Fair for Parks coalition, joining 300+ groups and organizations leading a multi-year advocacy effort to elevate parks and open space issues in NYC.

Ensure that water access points are preserved and maintained as resilience projects go forward.
Significant investments in flood protection are in process all along the south shore of Staten Island, including a seawall that will connect with the cliff at Fort Wadsworth. This construction should seek ways to enhance access to the beach and the cultural and recreational resources at the Fort, and consider the recommendations in Chapter 2 about connectivity.

Center equity in every conversation.
Ongoing efforts to incorporate public feedback on waterfront improvements could be expanded, such as the Art for Community Transformation process introduced in Chapter 1, which provided an illustration for this chapter. Across the City, it’s becoming critical to plan for community sustainability under pressures of gentrification. It’s particularly important to actively search for unforeseen consequences, be wary of loopholes, and look far ahead so that investments in public waterfront space are truly public and enrich the lives of all community members.

“We’re the borough of parks, yet the most under-funded parks of any borough,” said Jacky Krogh, Director, Kayak Staten Island.
CHAPTER FOUR
Public open space and in-water recreation

Mid Term
Create new waterfront access on city-owned property along Front St. across from the SIR Clifton Car Repair Shop maintenance facility.

In general, streets in the study area do not end at the harbor’s edge; roads run parallel to the shore or end in private waterfront property. But in spots where the waterfront roadside is under the authority of the City, such as along Front St. across from the Staten Island Railroad’s Clifton Car Repair Shop (closest app navigation is 777 Front St.), successful techniques for creating water access at other street ends around the City could be a guide for similar access here. For example, a dock was placed at the foot of 2nd Street on the Gowanus Canal not long ago, and today the site is active and safe, connecting New Yorkers to their environment and adding to the neighborhood’s quality of life. To be sure, efforts like this require coordination among multiple New York City agencies, including the New York City Department of Transportation, New York City Economic Development Corporation (NYCEDC), New York City Department of City Planning (NYCDCP), and NYC Parks. New York State agencies such the Department of Environmental Conservation have a significant role in permitting at some sites.

Long Term
Strengthen requirements to build and maintain public access onto the water with special attention given to permitting hurdles.

New York City is one of the few municipalities in the country that requires waterfront public space along the shoreline with some forms of private development. This waterfront zoning has increased pedestrian and bicycle access along the water’s edge and created waterfront plazas, but it lacks specific requirements to induce access onto the water, with the result that few kayak launches, beaches, get-downs, or marinas are being built, compared to the amount of overall waterfront construction.

Waterfront zoning currently requires specific shoreside features, including planting, seating, tables, shaded areas, bike racks, and trash receptacles.
This sets a precedent to add requirements at a similar level of detail for in-water access. Particularly when there is a history of maritime activity at a site, redevelopment should be specifically required to retain or restore access features, including bollards or cleats for tying up boats, get-downs or gangways for people to cross onto the water, and utilities like power and water to enable safety and comfort. In-water features are typically permitted by New York State Department of Environmental Conservation and the US Army Corps of Engineers and greater interagency collaboration among different levels of government, along with easier ways to permit in-water infrastructure, is needed to make recommendations like this one successful.

Buono Beach at Alice Austen House was fortified after Hurricane Sandy with additional rip rap boulders and continues to serve the community as an important harbor access point. Credit: Karen Imas
CHAPTER FOUR
Public open space and in-water recreation

Induce or incentivize private waterfront property owners to provide public access onto the water, particularly between 145 and 191 Edgewater St.

There are excellent examples of public-private coordination to improve waterfronts, including WEDG-certified Domino Park in Brooklyn and Hunters Point South in Queens. The stretch of the study area between 1 Edgewater St. and 191 Edgewater St. includes one office block and several blighted warehouses all directly on the waterfront. If this stretch of waterfront is up-zoned and gains greater value, community sustainability and safe maritime use should be addressed by requiring reactivation of the old warehouse bulkheads for public in-water access. The properties clustered from 145 to 191 Edgewater are already creating gentrification concerns in the community, and include a designated Priority Marine Activity Zone, which should mandate that future uses remain consistent in providing boating.

4c: WEDG STRATEGIES AND CREDITS TO IMPROVE PUBLIC ACCESS AND IN-WATER RECREATION

Credit 0.4 - Ensure the maintenance, ongoing performance, and adaptive management of waterfront projects in support of access, ecological health, and resiliency.

Credit 2.1 - Create or improve high quality public access areas on the waterfront that maximize interaction with the water and are shaped by community priorities, to promote equitable, engaging, and healthy waterfronts.

Credit 2.6 - Increase connectivity of green and blue spaces along the waterfront to promote physical activity, health and wellbeing, and encourage non-motorized transportation options.

Credit 2.7 - Enable people to safely and directly access and interact with the water to enhance human wellbeing and promote stewardship of the waterways.

Credit 2.8 - Promote low-impact, safe design that accommodates a diverse range of vessels and facilitates educational programming.

“Piers are naturally a good spot to build around because they provide some level of wave-breaking and shielding activity. If not, there are riprap/natural shoreline methods to create a little cove to allow for access and make getting into the water easier,” said Anand Agarwal, P.E., Associate, McLaren Engineering.
CHAPTER FIVE
Economic and workforce development

5a. BACKGROUND

Pursuing economic potential
The Staten Island shoreline has seen investment in recent projects including the New Stapleton Waterfront mixed-use development and the Empire Outlets shopping destination. But as exemplified in the multiple starts and stops with construction—and ultimate re-envisioning—of the New York Wheel attraction near St. George, many local businesses remain frustrated by gaps in economic activity. Many Staten Islanders don’t visit their own waterfront and efforts to draw tourists to the borough have not been completely successful in spreading economic activity beyond the ferry terminal. For years, people have talked about how to tempt visitors enjoying the famous ferry ride to disembark and explore Staten Island. As mentioned in earlier chapters, more wayfinding and improved transportation is a recognized need that serves multiple purposes for employers, residents, and visitors.

The northeast shore includes a number of under-utilized waterfront properties, many with private ownership, and some now occupied by non-water-dependent uses. Through stakeholder interviews and public workshops, Staten Islanders express interest in revitalization here, though it may be that owners are awaiting a future up-zoning. There are widespread infrastructure needs across much of the waterfront real estate of the northeast shore, adding complications. Old bulkheads, sea walls, and relieving platforms need to be stabilized before new uses can be activated. There may be historic industrial pollutants in the ground to be remediated, and utilities probably need to be upgraded before new structures add stress to the neighborhood’s systems.

“It is vital to utilize the waterfront in our business and for our city. With all of the boats and assets, we can get people moving back and forth; whether it be first responders, or people needing to leave Manhattan to a safer place [citing 9/11 as an example],” said John DeCruz, President, Sandy Hook Pilots.

NYC Ferry launches at St. George Terminal in August 2021
Credit: NYC Mayor Flickr
The working waterfront

Commercial marine operations have made their homeports around Staten Island for generations, and stretches along the Kill Van Kull and the West Shore are designated New York City Significant Maritime and Industrial Areas, recognized for water-based infrastructure, cooperative hydrographic conditions, and the potential for intermodal connections. On the northeast shore, you find the working docks of the U.S. Coast Guard Boat Station, the Sandy Hook Pilots Association, and Reynolds Shipyard Corporation. This stretch includes a City-designated Priority Marine Activity Zone, and a now sparsely used inlet behind 145 to 181 Edgewater St. that could provide space for an additional maritime business. Local industry also features Wilhelmsen Ships Services and the innovative MakerSpace NYC, where creative entrepreneurs can share membership access to equipment and tools for manufacturing and product development.

Maritime businesses value Staten Island’s relatively shorter access to the ocean gateway of our harbor. Along the northeast shore, commercial piers are a good fit for the water conditions, where strong currents and the impact of marine debris call for more robust infrastructure. These piers are costly to build and maintain, often including burdensome permitting that complicates preserving and improving maritime access, which private business owners must cover at their own expense. Dredging is often needed, and not just due to normal river flow; combined sewer overflow regularly deposits sediment that accumulates along the shoreline. At commercial piers, dredging is a significant expense usually borne by private business. Moreover, since large swaths of our harbor bottom are permeated with legacy pollutants, disposal of dredge material makes the process even more costly.

One of the many jobs of Reynolds Shipyard Corporation is to supply the needs of ocean going cargo ships. Several of these important working waterfront services homeport on Staten Island’s northeast shore. Credit: Margaret Flanagan
CHAPTER FIVE
Economic and workforce development

The maritime workforce
With Staten Island’s nautical connections, it’s no wonder there’s a strong presence of maritime workers in the workforce, many from families who have worked on the water for generations. The 2019 Shared Harbor Survey conducted by NYC EDC found that across New York City, there are 4,480 to 6,890 maritime jobs with an average business size of 53 to 82 employees. On Staten Island, there are 17 maintenance and ship repair sites, 17 cargo and commodity terminals, nine tug and barge businesses, 13 “other” maritime businesses, and, of course, one ferry terminal. Three quarters of respondents to the Shared Harbor Survey have difficulty finding skilled employees, and 82% have hosted interns. Reducing barriers to entry in the workforce (for details, see WEDG credit 2.5), is an ever-expanding goal, with wide support from employers and unions. Balancing realities such as unpredictable or non-traditional scheduling, seasonal conditions, and market ebbs and flows, to develop maritime careers will help fulfill the potential for emerging jobs, led by investments in in offshore wind.

Staten Island offers education towards maritime work, from youth experiences at P.S. 59 The Harbor View School, to Career and Technical Education offerings (CTE) at Ralph R. McKee High School, to research and specialized studies in higher education at the College of Staten Island. Similar to other communities around the region, Staten Islanders call for strengthening the connections from school to jobs and providing more specialized training for maritime careers and for careers of the future. Interview respondents emphasized that new employment such as at the Empire Outlets shopping mall is welcome, but for meaningful economic and workforce development, they prefer increasing long-term careers over low-wage jobs.

“...[open and public waterfront] spaces as economic stabilizers should be at the forefront of economic development,” said Victoria Munro, Executive Director, Alice Austen House.

5b. RECOMMENDATIONS FOR ECONOMIC AND WORKFORCE DEVELOPMENT

Near Term
Maximize local social and civic resources.
A number of the stakeholders interviewed, such as those from the Staten Island Urban Center and the Central Family Life Center, can facilitate a deeper understanding of what successful workforce development means and also maintain the communication networks to help accomplish it in the community. Job and applicant quality for local positions can be strengthened through partnerships with workforce development organizations, high schools, technical or vocational schools, colleges, and other educational providers. Additionally, partnerships with local work placement programs through organizations such as the Staten Island Chamber of Commerce and the Staten Island Economic Development Corporation can help employers with direct outreach to local residents and to seek quality candidates that may represent historically under-served communities.
CHAPTER FIVE
Economic and workforce development

Make waterfront-sensitive transportation and public space investments.
Maritime and manufacturing businesses, such as Reynolds Shipyard Corporation and MakerSpace NYC, need to be serviced by trucks. But additional investments in the streetscape, such as better sidewalks and paving, can support other opportunities, such as food trucks, small concessions, or other businesses interested in expansion. Simply making the streetscape more attractive while maintaining active commercial vehicle access can support economic development.

Promote Staten Island to visitors and tourists.
Through NYC & Company and other global marketing efforts, publicize Staten Island as a destination for both New Yorkers and tourists, especially elevating maritime and local history, as well as waterfront or harbor experiences.

Mid Term

Support maintenance and resilience of the waterfront.
Maritime businesses provide essential services, often from behind the scenes, and this work must take place at the water’s edge no matter how high the sea level might rise. Their needs for waterfront infrastructure maintenance and for storm preparedness and managing sea level rise are nuanced, and at times not well matched to current requirements and permits. City government has created a portal to consolidate permitting information, www.waterfrontnavigator.nyc, but the process is still complex, slow, and costly. Another support was established in 2019 with the City’s first wetland mitigation bank, coincidentally at Saw Mill Creek in another part of Staten Island, making it easier to meet any required environmental compensation for a necessary waterfront construction step. Continued government support for improved maintenance and resilience on the waterfront will have strong, positive economic ripple effects for existing and new local businesses, and for communities connected by the vast supply chains that cross our harbor.

Add active public space.
Creating new recreational sites, such as a skate park and kayak launch at Front St., would provide opportunities for more recreational programs, and generate public activity and economic opportunity. The designated Stapleton Anchorage for commercial ships lies just offshore, but there is plenty of shallow water in between for recreational boaters to remain at a safe distance.

Expand maritime experiences and BlueTech training opportunities.
Expose more residents to the waterfront on Staten Island by increasing kayaking, sailing, or boatbuilding programs to inspire early interest in maritime careers. Expand centers such as MakerSpace NYC to support the emerging BlueTech sector. Increase high school CTE programs and make deliberate connections between their students and waterfront businesses. Time specific training opportunities for maritime positions according to the industry cycle, so that when jobs do open up, locals are well-positioned candidates. Pay particular attention to the trades employed in the burgeoning offshore wind industry, including electricians and boat crew.
CHAPTER FIVE
Economic and workforce development

Long Term

Preserve deep water at piers.
Waterfront maintenance must go hand in hand with in-water dredging, a significantly expensive component to maintaining maritime operations. An innovative partnership between the New Jersey Department of Transportation (NJDOT) and the New York-New Jersey Harbor & Estuary Program (HEP) recently took a step forward in New Jersey waters by combining environmental and commercial goals. Together they supported the Contaminant Assessment and Reduction Project (CARP) to better identify pollutants in port sediments, providing information that allows maritime operators to take advantage of any possible lower cost dredge disposal options. Another approach is to identify piers that naturally have deep water and dedicate them to ship docking, ensuring any redevelopment efforts do not detract from water-dependent uses, such as misplacing a restaurant at the edge of the pier with the deepest water. While New York City zoning for Significant Maritime and Industrial Areas (SMIAs) and Priority Marine Activity Zones (PMAZs) does require consistency in support of water-dependent uses, these designations cover just a fraction of local usable waterfront. Particularly with PMAZ’s, more oversight of final construction is needed to ensure the result matches the intention of preserving boating access.

Improve procedures or even change legislation to better facilitate development and maintenance of commercial waterfront businesses.

New York State Department of Environmental Conservation permits could be more flexible, allowing variances and innovation in meeting the unique needs of pier and bulkhead maintenance and ship docking. On the northeast shore of Staten Island, waterfront property ownership is disjointed, and the variety of private owners could be difficult to bring together for the kind of critical mass that could take advantage of any wider initiatives or offer more significant community benefits. Other NYC zoning tools could be improved or expanded. For example, as part of the recent rezoning of Governors Island, the preservation and expansion of the existing perimeter esplanade around the island satisfied waterfront zoning’s public access requirements. However, it did not include mandates or incentives for future construction to expand access onto the water, though most involved recognize that’s a beneficial goal in island redevelopment. Marina and boating zoning typically falls under C3 and C3A districts, but that designation prescribes very low-rise commercial or residential buildings. Since much of our usable waterfront lies in higher density areas, either adding a category under C3 that allows moderate density, or adding incentives in up-zoned districts for projects that build boating-friendly, in-water infrastructure, might encourage the creation of new public town docks and waterfront commercial activity. MTA’s new Zoning for Accessibility program, which gives developers alongside subway stations an incentive to dedicate space for necessary public accessibility infrastructure such as station elevators, could provide a model. Adding more waterfront lots to the SMIA and PMAZ designations would incentivize the creation of additional maritime jobs. Balance is key, however, as interviewees made it clear that they want a vibrant, shared waterfront at a scale appropriate to the existing community.
CHAPTER FIVE
Economic and workforce development

Electrify the waterfront for sustainability.
The maritime importance of upland utility connections is often underestimated in planning. Now is the time to start transitioning our waterfront commercial operations to renewable energy. Globally, many pilot projects exist for ships that run on batteries instead of petroleum fuel. For this to work on our harbor, we need connections on our waterfront for significantly more power than is now typically brought to the water’s edge by the grid. Integration of solar power into new and existing waterfront facilities should also be considered.

5c: WEDG STRATEGIES AND CREDIT FOR ECONOMIC AND WORKFORCE DEVELOPMENT

Credit 2.5 - Provide employment opportunities and vocational training in maritime fields to support the local economy and water-related industries.

Former industrial sites on the northeast shore, now underutilized waterfront, offer important opportunities for maritime revitalization that should also prioritize input from the community. Credit: Olivia Ahner
CHAPTER SIX
Climate resilience and edge strategies

6a. BACKGROUND

Cumulative effects impact the shoreline
Communities across the harbor were devastated during and after Hurricane Sandy in 2012, with the worst blows to Staten Island along its southern shore. Near St. George, the shuttered Cromwell Recreation Center was destroyed. Businesses across the waterfront were severely affected. On Staten Island’s northeast coast, pockets were flooded—with waters rising as much as 3 feet, and the Bay Street landing was impacted. In Clifton, seaward of the rail facility, a boat was washed ashore. At Edgewater Plaza, a Staten Island University lab was impacted and the large building was closed for months.

The accumulating effects of post-industrial disinvestment, storm-battered shores, and decaying waterfront infrastructure became clearer during Sandy and underscores the viability and future of coastline planning, economic development, and programming. Communities also feel battered in a very personal way. Many locals feel that the City’s response to Sandy was not sufficient and FEMA was slow. They perceive that resilience construction seems difficult to actualize, or as we heard in interviews, “who knows how long that could take?”

Local advocacy groups call for more information and education
Calculated by the NYCDCP in the agency’s Community District Profile that included our study area, flooding is a huge risk. Currently, 2,300 people live in the 100-year floodplain; this more than doubles to 4,900 in the current 500-year floodplain (which is likely to be the 100-year floodplain of the 2050s). The profile details how many of these people are socioeconomically “cost-burdened.” Lack of a connection between communities and their waterfront has added to a lack of understanding of the public investment that will be necessary to increase resilience against sea level rise.

Staten Islanders have first-hand, devastating experience with the effects of climate change, most recently from Hurricane Sandy, followed by Hurricane Irene. Interviewees commented that Staten Island should be the “poster child” for climate change action in New York City and the associated environmental justice activism, but needs more community organizations and leaders amplifying these issues and organizing for change and investment.

Progress so far
All levels of government have begun to implement coastal protections, from the City to the federal U.S. Army Corps of Engineers. Along part of the South Shore of Staten Island, the federally funded and state-managed Living Breakwaters infrastructure project will add resilience via a large in-water berm and a living breakwater oyster reef. While landside coastal resilience discussions tend to occur more commonly around new developments, such as Urby, as opposed to addressing existing homes or businesses, New York City’s new Zoning for Coastal Flood Resiliency, adopted in 2021, is changing the conversation. Given the number of existing buildings in the floodplain, affordable resilient retrofits and a more comprehensive approach to resilience planning is now possible through use of the City’s new coastal zoning rules that promote the design of buildings that are better protected from flood risk, reduce flood insurance costs, and protect and support public access to waterfront sites through resilient open space design. The impact of these trends on the borough as a whole should be taken into consideration when planning for future housing needs, considering that future decisions around local relocation in the face of flood risk might occur.
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On the northeast shore, some resilience infrastructure has been implemented on working waterfront properties serving the Sandy Hook Pilots and the Coast Guard. Post-Sandy, Buono Beach was repaired by NYC Parks to stabilize the walkway and upper areas. But this whole stretch of Staten Island is threatened by erosion, a particular concern for those with property interests at the cliff top near Fort Wadsworth.

Stakeholders identified the historical assets of Alice Austen House and Fort Wadsworth as at-risk sites that should be protected. Infrastructure for public access points onto the water are particularly vulnerable, such as the beaches at Fort Wadsworth and Alice Austen House. There is also NYCHA housing in the floodplain at Richmond Terrace and at the New Lane Senior Center, and a new NYCHA building is being constructed in the floodplain at Stapleton. We encourage the City to invest $2 billion annually in NYCHA capital repairs citywide. Closing this critical funding gap will create jobs and support these developments to serve New Yorkers 365 days of the year, preventing the disproportionate impacts of disasters on NYCHA residents.

Looking towards the St. George ferry terminal reveals the accumulating effects of post industrial disinvestment and storm battered shores on the northeast coast of Staten Island. Credit: Margaret Flanagan

Erosion is a significant concern in the study area. Credit: Olivia Ahner
6b. RECOMMENDATIONS FOR CLIMATE RESILIENCE AND EDGE STRATEGIES

Near Term

Increase public education about coastal resilience.
The general public, government representatives, real estate professionals, and planners could all benefit from increased data on the effects of sea level rise and increased storm events in relation to resilience measures for the community and for new waterfront development. Provide wider education around mitigating climate change including renewable energy such as offshore wind, and resilient waterfront design through WEDG® (Waterfront Edge Design Guidelines). The WEDG Professionals course is one way to help individuals working in diverse sectors understand the benefits of a resilient edge and to balance nature-based strategies, such as permeable landscaping, with structural strategies, such as wet or dry floodproofing. Youth STEM education opportunities could be increased in partnership with Fort Wadsworth, community organizations or businesses, or as envisioned by a new Maritime Education and Recreation Center (see Chapter 3). Informational signage about high water along the waterfront could offer easy opportunities for community-based education and support interactive resilience education such as Waterfront Alliance’s Estuary Explorers Waterfront Lab and Coastal Resilience Education Toolkit.

Mid Term

Maximize the use of nature-based resilience measures.
Ecologically enhanced edges and natural shorelines can help reduce tidal energy and filter and absorb stormwater. They may not alone meet the level of protection for a major storm event, but they provide significant co-benefits for the community and the estuary, so should be widely implemented. Take note of the shallows, which are ecologically valuable and a natural source of wave attenuation. If wave-attenuating wetland area is introduced with native ecology, environmental education programs can explore a restored native ecosystem’s flora and fauna, as long as appropriate human access points into the wetland are included in the design.

Face the problem of erosion.
In our study area, the coastlines along Front and Edgewater Streets are relatively close to sea level, and farther south, closer to Fort Wadsworth, the coast is a tall cliff. In all areas, erosion is affecting the stability of nearby land uses. Recognizing that, the New York City Department of Buildings has mapped Staten Island’s northeast shore as a Coastal Erosion Hazard Area, an “exceptionally vulnerable” shoreline. Where the coastline is low enough to allow public access onto the water, such as across from the SIR Clifton Car Repair Shop and at Buono Beach, stabilizing efforts such as additional rip rap boulders need to be carefully designed so as not to impede that access. In areas managed by NYC Parks, there is a limited budget for this work. The coastal cliff is topped with mostly private property and has not been closely studied.
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Long Term

Add more resilience infrastructure on Staten Island.
Stakeholders described many examples from around the region that they would like to see considered, and also emphasized that new infrastructure should address as many community needs as possible, not just coastal protection. Balancing the efforts for resilience with maintaining access and views to the water as possible was widely discussed, acknowledging that aesthetic and access complications could arise from protecting buildings in the floodplain. Suggestions included building berms similar to The Hills on Governors Island in the lower-lying stretches that could also serve as new park-like viewpoints, and building a seawall that could also serve as a public greenway. Residents acknowledged that projects such as a new seawall behind Edgewater Plaza would likely block harbor views. Nature-based solutions were popular, with suggestions to establish a shoreside landscape that accepts the water where possible, detains it within planted pockets, then sends overflow to a catch basin and eventually an outfall.

Change regulatory guidelines and planning processes to build better resilience infrastructure.
Implement regional and state-wide planning frameworks that advance comprehensive resilience planning. Use the momentum of the impact Hurricane Sandy had on Staten Island to fight for stronger risk-based planning in this borough and ensure that maintenance is part of the discussion around long-term plans and future resources required for both existing and new maritime infrastructure. The Rise to Resilience Coalition is advocating for the development of climate resilience strategies for all five boroughs as part of, or in conjunction with, the call for comprehensive city planning. A unifying 520-mile coastal climate blueprint for New York City is essential before making decisions about density or resiliency investments.

Consider limiting density in the flood plain.
After Hurricane Sandy, a buyout program supported some Staten Islanders who had been living along the South Shore to move out of the way of future flooding, with future development being prohibited on those sites. But in other parts of the Staten Island shore, new construction is planned in the flood plain. In our study area of the northeast shore, there are underutilized private property lots that have a commercial zone designation. If these properties were rezoned for residential development, the question of how much density is appropriate would likely be challenging. Though certain flood protections can be easily required for new buildings, current property owners seek priority support for their own resilience retrofits, and the community largely prefers low-density housing.

“It’s hard to imagine anywhere in the world where you have a vision like the Verrazzano Bridge and lower Manhattan that isn’t filled with thriving businesses and people, but no one is looking at the potential here because the most basic bulkhead or seawall infrastructure isn’t there,” said Ole Olsen, Chair of Waterfront Committee, Staten Island CB1.
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6c: WEDG STRATEGIES AND CREDITS TO INCREASE RESILIENCE

Credit 0.2 - Provide an analysis of the project site to inform a design approach in line with site conditions and a baseline from which to measure performance over time.

Credit 0.4 - Ensure the maintenance, ongoing performance, and adaptive management of waterfront projects in support of access, ecological health, and resiliency.

Credit 1.1 - Reduce human health and safety risks and potential damage to site features.

Credit 3.1 - Ensure the structural integrity and sustainability of the shoreline and near-shore area using a strategy that has the greatest possible positive impact on the environment and community, given the intended use and context.

Credit 4.9 - Reduce the overall volume of stormwater quantity, using recharge or infiltration whenever feasible.

Category 5 - Innovation

Designers can also use Category 3 in WEDG/Appendix B for exploring edge stabilization strategies other than bulkheads. New technologies for ecologically-enhanced edges which mimic natural features and improve biodiversity can be applied in areas of high erosion risk or maritime sites.

“Ensuring you mix in greenery amongst all the grey [infrastructure] incredibly improves the amount and quality of stormwater flow; it’s really the best approach,” said David Kinskey-Lebeda, Civil Engineer, Arup.

CROSS CUTTING CASE STUDIES

The separate thematic areas explored in the previous chapters naturally overlap in real life. Next, we provide a brief example of how these themes come together on both public and private property.
CASE STUDY: PUBLIC PROPERTY

Shoreline along Front St across from the SIR Clifton Car Repair Shop (Block: 2820 Lot: 105)

This pebble beach could offer increased educational programs, kayak explorations, and public access to the water by just adding simple amenities. Credit: Jacquelyn Krogh

HISTORY

Though simply a narrow stretch of asphalt on the shoreline side of a street, with an easy slope of a pebble beach leading into the water, this spot is highly valued by locals for its access to and views of the harbor. People freely bike or park and fish or kayak, or simply enjoy the view during lunch or a stroll. And like other public spaces, the community seeks to maintain flexible opportunities for enjoyment. This is the preferred north shore launching site of Kayak Staten Island, who use the nearby address of 777 Front St. for easier landside navigation to this Informal water access point.

RECOMMENDATIONS

Historically, some postindustrial public waterfronts similar to this have been placed under the City’s Department of Small Business Services and Department of Citywide Administrative Services, and a variety of agencies contribute and cooperate as revitalization efforts can be explored. Future planning should deeply engage the community, who recognize the need for resilience, but also highly value the educational, open space and access opportunities here. Many interviewees commented that simple improvements, such as adding benches, kayak storage or regular trash collection, would be a significant benefit. Some are even wary of increased attention that might overdesign this waterfront and replace or over-regulate long standing uses such as launching a kayak or parking for a waterfront lunch break. Even now, this large lot offers room for boats, bikes, and vehicles to all have waterfront access, but pedestrian safety and infrastructure need improvement.

“Because Staten Island doesn’t get a lot of waterfront attention, people tend to go out and make [these opportunities] themselves. The community will come out and organize beach clean-ups, group swims, or birding. A lot of self-activation is happening,” said DB Lampman, Co-Founder & Associate Creative Director, MakerSpace NYC.
CASE STUDY: PRIVATE PROPERTY

Shoreline along 145, 181, and 191 Edgewater St

HISTORY

The old Wrigley Building factory at 191 Edgewater is a local legend. Spurred by the inventions of Staten Island resident Thomas Adams, the building began making gum on the northeast shore in 1917. In recent decades, the site has made the news as residential real estate deals have been proposed, though none yet have advanced to construction. It’s probably too late to save parts of the historic factory for restoration, but until redevelopment plans materialize, it remains the most notable of this group of dilapidated industrial buildings hugging the coast. One might guess that the owners have noted upzonings progressing from St. George across northern Staten Island and are awaiting their turn. The area’s close connections with waterfront industry are revealed in sections of the waterfront which are an identified Priority Marine Activity Zone, indicating that shoreline uses and infrastructure must remain consistent with maritime activity such as vessel docking and berthing. Meanwhile, the old, decaying built edge brings concerns about large debris falling into the water and creating hazards for the nearby ships of the working waterfront.

RECOMMENDATIONS

Deep investment in community-based planning will be necessary to ensure a cooperative future blending new buildings and housing with the fabric of the community and ensuring that displacement is avoided. Coastal resilience is needed across this neighborhood, not just for new construction. Community benefits are made more challenging by the nature of private property development, where economics make a hard bottom line and public agencies are bound by existing zoning and building rules. The street is very narrow here and transportation improvements that allow safer biking, walking and wayfinding, while maintaining necessary truck access for working waterfront sites, can’t easily grow past private property lines.
Waterfront zoning could help ensure the benefits of public open space on this shoreline, and from a maritime standpoint, the Priority Marine Activity Zone designation is a very valuable tool. Across the city, many refurbished piers no longer include docking infrastructure, and it is incredibly difficult to build a marina now. A few small boats sometimes harbor in the protected boat basin that remains here in Staten Island, since even in the crumbling surroundings, the geography is very supportive of docking. While this specific use can’t be mandated to a private property owner, it would be very grim to lose a good marina site to alternative development. Additional education and public recreation activities could be a helpful component of a future marina proposal, similar to the One°15 Brooklyn Marina in Brooklyn Bridge Park, which allocates 2% of docking fees to enable free community programs.

CONCLUSION

Whether on public or private property, community-driven planning will be a key component to successfully revitalizing the northeast shore of Staten Island and serving the community from businesses to residents and visitor alike.
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