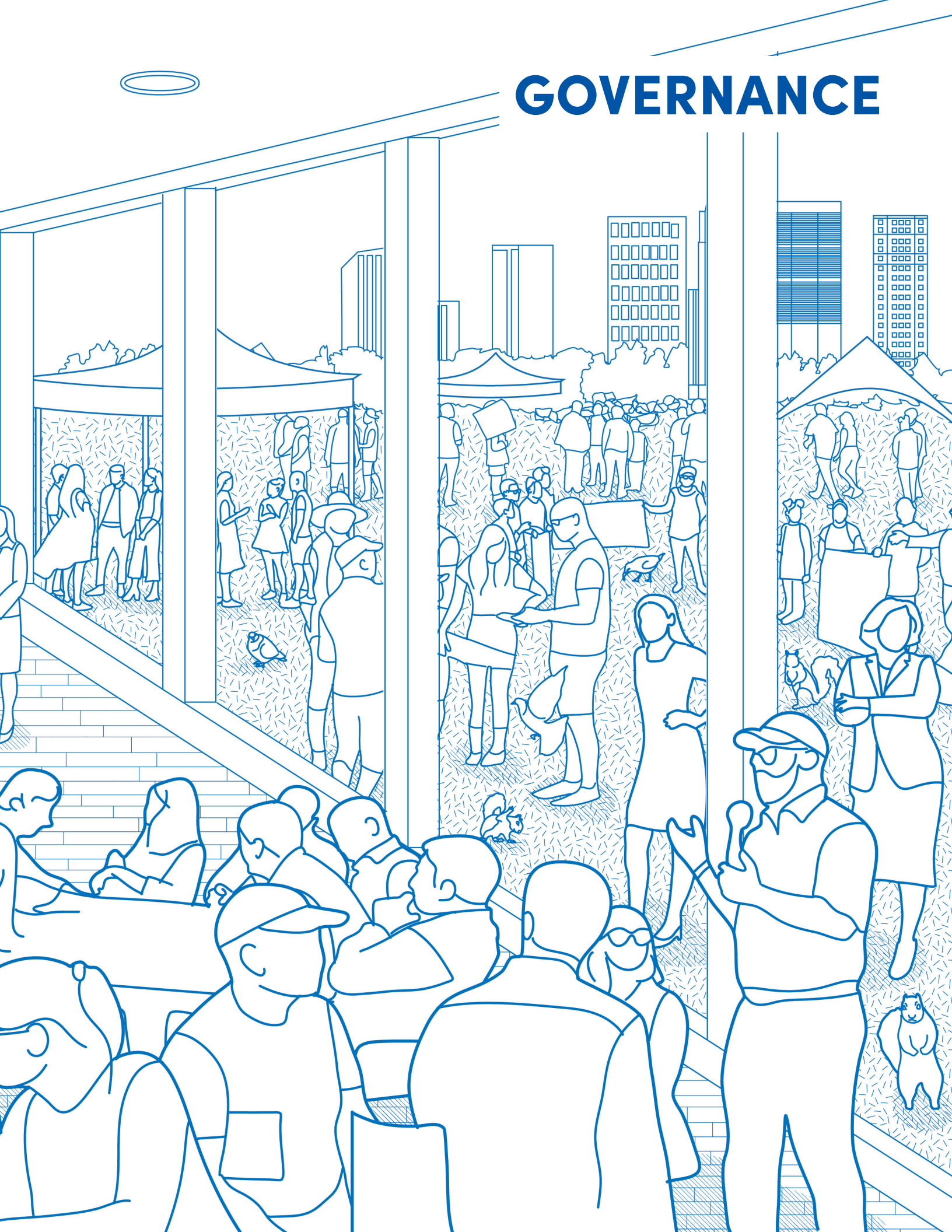


GOVERNANCE



For the City to rise to the combined challenges of competing demands of the waterfront, rising sea levels and a changing climate, and realize the goals laid out in this Plan, it must improve its coordination of building and maintaining critical shoreline infrastructure across agency jurisdictions and different levels of government. This work will also involve collaborating with the owners of privately owned shoreline areas, design and engineering practitioners and local communities.

Goal 1: Improve coordination, management and monitoring of current and future public waterfront infrastructure

Goal 2: Ease the path to construction by improving the City's permitting processes and developing gold-standard guidelines for NYC's waterfront and waterways

Goal 3: Improve the ecological condition of the City's shorelines by modifying the environmental regulatory processes to allow for in-water material placement for ecological benefit

Overview

This section of the Plan outlines the City's opportunities to improve the management of waterfront infrastructure, the permitting processes and guidelines applicable to these projects, and the regulations that govern waterfront and waterways.

Historically, changes in management structures and regulatory reforms at different levels of government have both shaped how waterfront governance is administered and the shoreline itself. For example, in 1921, the United States Congress approved the request of New York and New Jersey to form the Port Authority of New York and New Jersey (PANYNJ), an interstate agency with a mission to oversee the creation of vital infrastructure to serve the New York-New Jersey Harbor. This creation of PANYNJ transformed the infrastructure and operation of neighboring waterfronts and waterways with the goal of improving commerce and trade for the region. NYC's waterfront and waterways have also been shaped by the Clean Water Act, which Congress expanded in 1972 to restrict landfilling of the country's waterways and protect marshes and wetlands, among other protections. This critical environmental law has been crucial in maintaining or improving the health of NYC's waterways and led to renewed interest in the use of our waterways and waterfront. The 1991 dissolution of the City's Department of Ports and Trade, the agency that managed City-owned maritime infrastructure, distributed its responsibilities and infrastructure assets to NYCSBS, NYCEDC and other City agencies.

Today, NYC has an opportunity to reimagine waterfront governance and regulations to meet the challenges of building and maintaining waterfront infrastructure in the face of climate change.

Coordination and Oversight of NYC's Waterfront

The complexity of NYC's waterfront is due to the variety and intensity of its use and the many entities overseeing this range of uses. Fourteen City, State and federal agencies share oversight of NYC's waterfront. USACE, NYSDEC and New York State Department of State (NYS DOS) regulate and issue permits for construction and maintenance of in-water structures. This jurisdictional landscape is further complicated by the significant stretches of NYC's waterfront under private ownership

NYC's publicly owned waterfront houses everything from marine transfer stations operated and managed by the New York City Department of Sanitation (DSNY) to bridges, public berths, marine terminals and ferry landings managed by NYCDOT and NYCEDC; to ports and airports managed by PANYNJ; to open spaces, beaches, and wetlands managed by NYC Parks, National Park Service and the New York State Department of Parks, Recreation and Historic Preservation (State Parks).

The City generally has jurisdiction (decision-making authority) over land use near the waterfront, but multiple jurisdictions have authority at the water's edge and within the water itself. Responsibilities for inspecting and maintaining waterfront infrastructure are divided among several agencies, which can create confusion about the particular agency holding jurisdiction over specific parts of waterfront infrastructure. Understanding jurisdictional responsibilities can be even more confusing if waterfront infrastructure supports multiple uses, such as parks or roadways.

In addition to the challenge of coordination and oversight among City agencies, the scale and complexity of some waterfront projects can require coordination with State and federal entities for permits and funding. For example, USACE leads studies and projects requiring coordination among multiple federal, State and City agencies and numerous community stakeholders. FEMA and HUD also fund significant coastal flood protection infrastructure in NYC, which adds additional oversight layers to these projects. The City must provide advocacy and leadership to secure State and federal funding, organize and communicate citywide policy priorities to these partners and amplify community input at multiple stages.

As waterfront communities continue to adapt and transform, the City is able to take immediate steps as it establishes a long-term plan to manage NYC's waterfront and waterways in a manner that promotes equity, resiliency and health.



RESTROOMS →



NYC
Selected Best Practices
for Public Art
in Transit Stations
This program is designed to provide
information and resources for
planning and installing public art
in transit stations. For more information,
visit the website at www.mta.com/public-art
or call 1-877-838-2262.



Goals and Strategies

Goal 1: Improve coordination, management and monitoring of current and future public waterfront infrastructure

Existing Management Structures for Traditional Waterfront Infrastructure

Traditional shoreline infrastructure — including piers, bulkheads, platforms, groins and dunes — plays a critical role in NYC’s landscape by fulfilling transportation needs, supporting the movement of goods and people, and providing spaces for recreation, habitat and reducing coastal flood risks. The City can face challenges keeping waterfront infrastructure in a state of good repair.

The infrastructure for most of NYC’s waterfront is supported by a series of interconnected foundations and marine structures that can be within multiple jurisdictions. Some waterfront assets, such as marine transfer stations, have well-defined management structures along with established long-term maintenance plans. However, many waterfront assets do not. Overlapping or ambiguous agency responsibilities can delay and challenge the coordination of inspections, capital planning efforts and repair. Even when agency responsibility for a waterfront property or infrastructure is clear, limited resources and competing agency priorities can lead over time to the infrastructure falling into disrepair and prolonged closure. These closures can limit public access to open spaces and amenities along the waterfront and exacerbate coastal flood risks.

Citywide coordination and waterfront asset management can be improved by clarifying and resolving questions about ownership and jurisdiction and by identifying common characteristics and needs across different asset classes to improve their maintenance and operation.

The City has already taken steps to improve coordination of waterfront infrastructure. For existing City-owned waterfront infrastructure, NYCEDC developed the Waterfront Facilities Maintenance Management System (WFMMS) and Waterfront Inspections Program (WIP) to centralize information and track current and future maintenance of bulkheads, waterfront facilities and marine substructures. These programs identify preventative maintenance requirements for existing assets, assist in budget development, and streamline maintenance funding requests among capital agencies that share jurisdiction.

Opposite:

The Interim Flood Protection Measures (IFPM) program is designed to protect critical facilities, infrastructure, and low-lying areas in New York City from flooding caused by a hurricane. The IFPM Mural Arts Program allows artists to showcase their work on the HESCO® barriers. These art installations are currently located in Red Hook, Brooklyn, and South Street Seaport, Manhattan.

Credit: MOCR

Emerging Management Structures for Coastal Protection Projects

To help NYC adapt to the impacts of climate change, the City is developing a new asset class: coastal flood protection infrastructure. These projects include floodwalls, temporary and permanent deployable floodgates, levees, and new drainage infrastructure, that can also be designed to incorporate other public uses such as open space. Today, several agencies hold jurisdiction and share responsibility on planning, designing and managing coastal protection projects.

For more information, see [“Climate Resiliency and Adaptation Goal 5” on page 95](#)

Building out NYC’s first generation of coastal protection projects is a multiagency effort. MOCR typically works with agency partners to coordinate the overall project and provide support in solving problems. New York City Department of Design and Construction (NYCDDC) and NYCEDC are responsible for project design and construction, and other agencies advise on maintenance, operations and design. NYCEM takes on several important roles, including helping to secure funding, monitoring compliance and developing operational and deployment plans.

Based on early lessons learned from these projects, the City is moving away from ad-hoc decision making and toward codifying and relying upon best practices. MOCR is creating the set of Neighborhood Coastal Protection Planning Guidance to recommend approaches for stakeholders in coastal protection project planning and design. As the primary operating and maintenance lead for City-owned floodwalls and gates, NYCDOT has started to create design and operational guidelines for new coastal protection projects. NYC Parks released [Designing and Planning for Flood Resiliency: Guidelines for NYC Parks](#) in 2017 to guide construction and rehabilitation of resilient waterfront open spaces. Operational agencies are also seeking funding commitments to fulfill their operations and maintenance (O&M) obligations. Some are creating new programs for their overarching O&M roles across the new suite of coastal flood protection systems, while others are integrating their designated O&M tasks into existing operational functions. Agencies tasked with O&M components of coastal flood protection projects are currently shaping the early design phases to ensure that designs are compatible with long-term operational needs.

Previous interagency coordination was essential to designing and constructing NYC’s current set of coastal protection projects. The lessons learned through these efforts demonstrates how the City can

formalize agency oversight and create capacity to sustained coastal protection projects and manage them efficiently over the long term.

Embedding Climate Change Within the Management of Existing and New Waterfront Infrastructure

As sea levels rise and climate projections are refined, the City will need to improve coordination of existing roles, account for new responsibilities, create capacity for operations and maintenance, and incorporate new ways of designing and managing waterfront projects. Routine state-of-good-repair work to replace deteriorating waterfront assets in-kind will not be sufficient. Instead, all investments to extend the useful life of waterfront infrastructure should be designed with consideration of future conditions.



Constructing Domino Park, Brooklyn.

Credit: McLaren Engineering Group



Strategy 1.1

Refine, expand and realign administrative processes and digital tools to help ensure infrastructure remains in a state of good repair and encourage modernized, resilient waterfront infrastructure.

Identify ways to improve City administrative processes to allow for greater efficiency and flexibility in implementing the Waterfront Inspection Program and address the findings of waterfront inspections through reconstruction, repairs and maintenance.

Strategy 1.2

Develop a structure for efficient and effective coordination, management and monitoring of current and future public waterfront infrastructure that includes:

Codification of the responsibility for portfolio oversight, project identification, design, construction, and operations and maintenance of coastal flood protection projects to a new or existing agency(s) and secure adequate funding to ensure agencies can fulfill these responsibilities.

Multi-agency capital planning exercises to identify funding needs for implementation and maintenance of waterfront infrastructure and coastal flood protection projects.

Program oversight to support coordination between City agencies, with State and federal agencies having the jurisdictional or regulatory authority to resolve inter-agency conflicts.

Coordination and oversight of long-term maintenance, monitoring, and operations of coastal flood protection systems.

Strategy 1.3

Develop processes to incorporate climate science feedback loops within the management and capital planning processes associated with existing and new waterfront infrastructure

Opposite:
Engineer-diver conducting a waterfront facilities inspection of Pier 5 at Brooklyn Bridge Park.

Credit: Jacobs



Goal 2: Ease the path to construction by improving the City’s permitting processes and developing gold-standard guidelines for NYC’s waterfront and waterways

To ensure high performance and safety of waterfront structures, NYCDOB and NYCSBS are developing a new ‘Waterfront Code’ to coordinate and regulate the design, permitting, construction and maintenance of marine structures. This effort will align with existing City, State and federal laws, codes and regulations.

In addition to developing a clear set of codes to guide waterfront infrastructure, the City can also take steps to raise awareness about the “[Waterfront Navigator](#)” — the City’s one-stop-shop online permitting guide for projects in or near NYC’s waterfront and wetlands. Centralizing this information improves the predictability and efficiency of the permitting process. This website explains the role of each of the agencies involved in waterfront permitting and provides easy access to their waterfront project permits, programs and requirements. The City also will continue to work with State agencies to expedite review processes (including the increasing digitization of the waterfront permit submission and review process) and to prioritize projects that advance a shared vision for NYC’s waterfront.

Opposite:
East Midtown Greenway under
construction, Manhattan.

Credit: NYCEDC



Strategy 2.1

Complete the development of a Waterfront Code tailored to the specific and varied conditions of NYC's in-water and shoreline marine structures.

Strategy 2.2

Identify opportunities to improve permit review processes and coordination with federal and State agencies.

Strategy 2.3

Increase awareness of the Waterfront Navigator as a tool to facilitate permitting and regulatory coordination for in-water projects, such as bulkhead repair, floating platform construction and maintenance dredging.

Strategy 2.4

Explore opportunities to improve the WFMMS as an online geospatial data and computer modeling tool that allows multiple stakeholders to access detailed maps, shoreline imagery and other essential data on the NYC waterfront.

Strategy 2.5

Increase coordination among City agencies to align in-water habitat mitigation projects and fund restorations to remove historic fill and debris material from NYC shorelines.

Opposite:
Reconstruction of waterfront
platform at Pier 35/36,
Manhattan.

Credit: COWI



Goal 3: Improve the ecological condition of the City’s shorelines by modifying the environmental regulatory processes to allow for in-water material placement for ecological benefit

NYC’s current shoreline has been built and rebuilt for several hundred years. In adapting NYC’s waterfront to climate change, there is an important opportunity to revisit the layers of regulations that play a role in shaping it.

The current City, State, and federal regulatory environment can impede resilient, more varied shoreline design by encouraging in-kind replacement of existing waterfront infrastructure and making in-water material placement — or clean fill — a difficult, costly and time-consuming proposition. Increasingly, however, waterfront project designers are identifying creative ways to transform hardened edges to help get New Yorkers closer to the water’s edge and to increase the ecological benefits associated with **living shorelines**, a protected, stabilized shoreline made of natural materials such as plants, sand, or rock. Living shorelines are being used by public agencies to rewild NYC’s shorelines with breakwaters or other in-water structures (like oyster cages) to can improve marine ecosystems and reduce the impacts of coastal flooding.

For many of NYC’s hardened edges, such as bulkheads, the process of providing access to the water and increasing ecological habitat requires transforming a typically abrupt vertical division between the land and water into a sloped division to accommodate intertidal zones. However, a sloped division can reduce the land area intended for development, which private developers usually avoid, or require clean fill to be placed into the water – a highly regulated approach that can increase a project’s timeline, cost and uncertainty over the ability to obtain required approvals.

For the City’s coastal flood protection projects (some of which may take generations to complete), this issue arises on an entirely different scale. As large swaths of NYC’s shoreline are redesigned to protect neighborhoods vulnerable to coastal storms, the City, along with State and federal partners, may need to explore in-water material placement and address the challenges that arise by taking this regulatory path. Projects like the East Side Coastal Resiliency Project, the Living Breakwaters in Staten Island and the FiDi Seaport Climate Resilience Plan are all examples that demonstrate different design

Opposite:
Living Breakwaters 3D basin
model.

Credit: SCAPE



responses to this issue: from designing the project within the existing shoreline, to exploring extension of the shoreline and building new in-water structures. By collaborating with State and federal regulatory partners to assess how to enable this important work, the City can explore how NYC's current shoreline can encourage resiliency and promote living shorelines or other natural features along NYC's mostly hardened edge.

Over the last decade, regulatory modifications have attempted to address these challenges. At the federal level, the USACE's Nationwide Permit #54 (NWP 54) is a prime example of a helpful tool designed specifically for living shorelines. Through NWP 54, clean sand placement (or clean fill) has been permitted for several NYC salt marsh restoration projects. These include Jamaica Bay to restore the salt marsh islands, in Alley Creek Park on Little Neck Bay to reduce salt marsh pool expansion, and along Hook Creek (at the head of Jamaica Bay) to trial thin-layer sediment applications on salt marsh. Although these initiatives demonstrate a regulatory path forward to designing and building future living shorelines in NYC, traditional bulkheads and hardened edges retain their advantage due to the relative ease of permitting.

The existing regulatory environment for NYC's waterways was put into place to help protect natural habitats, but reforming these standards does not mean lowering or removing them. Reform can improve the process, expand upon existing requirements to reduce the time necessary to secure permits and enable other, more viable options for shoreline design. For example, criteria used to assess a project's natural resource benefits could include the habitat type to be recreated, the species it supports, its local or regional abundance, demonstrated success in establishing that habitat at similar locations and whether the habitat being altered is sufficiently abundant that displacement of existing species is minimized.

As investments are made to adapt NYC's shorelines to climate change and connect New Yorkers to the waterfront, opportunity exists to explore recommendations and guidelines that recognize that recognize the ecological benefits of in-water material placement (or clean fill) for NYC's waterways.

Strategy 3.1

Explore pathways to promote living shorelines, including allowances of small in-water material placement (or clean fill) for ecological benefit.

Opposite:
Marine mattress installation

Credit: Baird



Above: Living breakwaters construction, Staten Island.

Credit: Weeks Marine, Inc; Bernstein Associates Photographers



Above: Alley Creek living shoreline installation, Queens.

Credit: NYC Parks

Pursuing In-Water Material Placement at the Shoreline or in NYC's Waterways

Living Breakwaters Project

Overseen by the New York State Governor's Office of Storm Recovery (GOSR) Living Breakwaters is an innovative, nature-based coastal infrastructure project. Once completed, it will be owned and maintained by NYSDEC. Together with the Tottenville Shoreline Protection project, it will address coastal flooding, wave action and erosion, while restoring and enhancing the ecosystems, improving waterfront access and engaging the public on resiliency strategies.

This project's goal is to reduce or reverse shoreline erosion and damage from storm waves along Raritan Bay and to improve the health of the local ecosystem, encourage stewardship of our nearshore waters and enhance people's experience of the shoreline of southern Staten Island. A central feature of the project is approximately 2,400 linear feet of partially submerged rubble mound structures (or breakwaters) located between 790 and 1,800 feet from shore. The intent is to improve safety, prevent erosion and provide habitat for local marine life.

The proposed design was evaluated under the Endangered Species Act to assess the effects that construction activities would have on the habitats of essential fish and other protected species – specifically, how converting a soft bottom sand habitat to a complex rocky habitat would affect them. This evaluation was done in consultation with State and federal agencies. The process reviewed the results of a two-year site-specific aquatic sampling program. Habitat lost due to the presence of the breakwater structures required mitigation, which was achieved by purchasing mitigation credits from the Saw Mill Mitigation Bank.

The project team undertook extensive physical and biological surveys of Raritan Bay to understand current conditions, to help identify target species for the project and their habitat needs. Biological surveys looked at benthic invertebrates and fish living in existing sandy bottom areas and in limited areas of existing hard bottom rocky habitat. Studies also examined existing artificial structured habitat

in the project's vicinity (such as rocky bases of channel markers). The project's environmental review and permitting documents included an extensive literature review, analysis, and a detailed description of the habitat-enhancing features and the ecosystem services to be provided. This demonstrated that the project would not have any adverse effect upon aquatic resources, would provide complex structured habitat to a range of aquatic species currently found on the site and provide ecosystem benefits to Raritan Bay generally.

Alley Creek Wetland Restoration Projects

Alley Creek has seen a series of restoration projects in the last decade, including new sewer overflow tanks and construction of an environmental center (read more in [“Water Quality and Natural Resources Goal 3” on page 225](#)). As part of these efforts, a recent NYC Parks-led phase of Alley Creek restoration includes restoring eroded marsh habitat along the historic shoreline. The project includes incorporating protective structures (“oyster castles”) to stabilize the eroded shoreline and restoring the surface of the wetland by adding clean sand so that it is raised to the elevation where salt marsh vegetation thrives. For this project, NYC Parks met with NYSDEC early in the process, beginning with the project concept to specify the restoration objectives and the rationale for adding protective structures (“oyster castles”) and clean sand (for filling salt math pans). Throughout the process, NYC Parks explained how these elements would work to improve the ecology of the sites. The process also included metrics, monitoring and other methodologies to assess existing ecological conditions. At these sites, Parks was able to show relatively recent wetland degradation. NYSDEC allowed the work to proceed as a pilot and included detailed monitoring requirements in the permit.

Goal 1: Improve coordination, management and monitoring of current and future public waterfront infrastructure

Strategy 1.1

Refine, expand and realign administrative processes and digital tools to help ensure infrastructure remains in a state of good repair and encourage modernized, resilient waterfront infrastructure.

Strategy 1.2

Develop a structure for efficient and effective coordination, management and monitoring of current and future public waterfront infrastructure that include:

Codification of the responsibility for portfolio oversight, project identification, design, construction, and operations and maintenance of coastal flood protection projects to a new or existing agency(s) and secure adequate funding to ensure agencies can fulfill these responsibilities.

Multi-agency capital planning exercises to identify funding needs for implementation and maintenance of waterfront infrastructure and coastal flood protection projects.

Program oversight to support coordination between City agencies, with State and federal agencies with jurisdictional or regulatory authority to resolve inter-agency conflicts.

Coordination and oversight of long-term maintenance, monitoring, and operations of coastal flood protection systems.

Strategy 1.3

Develop processes to incorporate climate science feedback loops within the management and capital planning of existing and new waterfront infrastructure

Goal 2: Ease the path to construction by improving the City's permitting processes and developing gold-standard guidelines for NYC's waterfront and waterways

Strategy 2.1

Complete the development of a Waterfront Code tailored to the specific and varied conditions of NYC's in-water and shoreline marine structures.

Strategy 2.2

Identify opportunities to improve permit review processes and coordination with federal and State agencies.

Strategy 2.3

Increase awareness of the Waterfront Navigator as a tool for facilitating permitting and regulatory coordination for in-water projects, such as bulkhead repair, floating platform construction and maintenance dredging.

Strategy 2.4

Explore opportunities to improve the WFMMS as an online geospatial data and computer modeling tool that allows multiple stakeholders to access detailed maps, shoreline imagery and other essential data on the NYC waterfront.

Strategy 2.5

Increase coordination among City agencies to align in-water habitat mitigation projects and fund restorations that remove historic fill and debris material from the shorelines across NYC.

Goal 3: Improve the ecological condition of the City's shorelines by modifying the environmental regulatory processes to allow for in-water material placement for ecological benefit

Strategy 3.1

Explore pathways to promote living shorelines, including allowances of small in-water material placement (or clean fill) for ecological benefit.