PART II:
THE POLICIES

POLICY ONE

SUPPORT AND FACILITATE COMMERCIAL AND RESIDENTIAL REDEVELOPMENT IN AREAS WELL-SUITED TO SUCH DEVELOPMENT.

Introduction
Development on the waterfront can help meet the housing demand for a growing population as well as provide jobs, generate tax revenue, and offer crucial services for New Yorkers. New York City has demonstrated success in achieving the revitalization of long-derelict waterfront areas with new residential and commercial development. In addition to bringing new activity to the waterfront and creating new housing, the rezoning of waterfront sites for housing and commercial development has created sufficient economic value to support the cleanup of sites that were contaminated by former industrial uses and the provision of new waterfront public access areas, and has facilitated investments in affordable housing.

Many coastal areas offer opportunities for commercial and residential development that would revitalize the waterfront. In certain instances, redevelopment of commercial, community facility, or residential uses on the waterfront should be encouraged where land is vacant or underused, subject to consideration of Policy 2, where applicable, and with consideration of other relevant issues, including the need to provide new infrastructure, to be compatible with natural resources, and to address current and future risks from coastal storms, pursuant to Policy 6.2. In determining whether land is underused, consideration should be given to the specific land use context, existing uses, and the potential for future use of the site, among other factors, as outlined in Policy 1.1 A.

Related Regulations
New activities generated by redevelopment of the Coastal Zone are regulated by local, state, and federal environmental programs. In addition, Article 6 Chapter 2 of the Zoning Resolution establishes special regulations applicable to the waterfront.

1.1 Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.

A. Criteria that should be considered to determine areas appropriate for reuse through public and private actions include: compatibility with the continued functioning of the designated Special Natural Waterfront Areas, the Arthur Kill Ecologically Sensitive Maritime and Industrial Area, or Significant Maritime and Industrial Areas, where applicable; the absence of unique or significant natural features or, if present, the potential for compatible development; the presence of substantial vacant or underused land; proximity to existing residential or commercial uses; the potential for strengthening upland residential or commercial areas and for opening up the waterfront to the public;

transportation access; the maritime and industrial jobs potentially displaced or created; and the new opportunities created by redevelopment.

Public actions—such as property disposition, urban renewal plans, and infrastructure provision—should facilitate redevelopment of underused property to promote housing and economic development and enhance the city's tax base, subject to consideration of Policy 2, where applicable.

1.2 Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.

A. Residential, commercial, and other non-industrial projects that comply with Article 6 Chapter 2 of the New York City Zoning Resolution satisfy the consistency requirements for Policy 1.2. If the project is not subject to the Zoning Resolution, the standards of Article 6 Chapter 2 of the Zoning Resolution should be used as guidelines for development and the inclusion of open space, visual access, upland connections, and water-related uses.

1.3 Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.

A. Encourage development at a density compatible with the capacity of surrounding roadways, mass transit, and essential community services such as public schools. Lack of adequate local infrastructure need not preclude development, but it may suggest the need to upgrade or expand inadequate or deteriorated local infrastructure.

1.4 In areas adjacent to SMIAs, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.

A. Consider the use of best design practices for residential development that reduce noise, odor, dust, light, vibration, or other effects of existing nearby maritime and industrial uses.

B. New residential development within one block of an SMIA should, where feasible, incorporate measures for disclosure to potential residents that the development is located within one block of an SMIA, and that active industrial uses are present in SMIAs consistent with City policy. In the event that the City Environmental Quality Review conducted for the new residential development determines there may be significant adverse impacts relating to industrial uses—including but not limited to noise, odor, dust, light, and vibration—which cannot be fully mitigated, disclosure should also be made of such impacts.

C. Site plans should be configured, to the extent practicable, to provide buffers between active industrial activities and residential uses.

1.5 Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.

A. Projects should consider potential risks related to coastal flooding to features specific to each project, including, but not limited to, critical electrical and mechanical systems, residential living areas, and public access areas.

POLICY TWO

SUPPORT WATER-DEPENDENT AND INDUSTRIAL USES IN NEW YORK CITY COASTAL AREAS THAT ARE WELL-SUITED TO THEIR CONTINUED OPERATION.

Introduction

New York City's working waterfront is vital to the city's economy. The working waterfront includes airborne and waterborne cargo operations—including containers, roll-on-roll-off, dry and liquid bulk, and heavy lift operations—and passenger transportation. In addition, it includes industrial activity and municipal and public utility services, including energy generation, storage and distribution facilities, and waste management and recycling services. By necessity, the waterfront is home to the marine terminals that are part of the Port of New York and New Jersey—the third biggest port in the country and the largest on the East Coast—as well as the many tugboat and barge operators, marinas, and ship-repair outfits that provide maritime support services to the Port.

The city's maritime businesses are supported by a vast waterfront infrastructure—much of it created at a time when New York was still a manufacturing powerhouse with a sizable export trade. This infrastructure includes the publicly owned marine terminals such as the Hunts Point Terminal in the Bronx, New York Container Terminal in Staten Island, the Red Hook Container Terminal and Bush Terminal in Brooklyn, and the cruise terminals in Manhattan and Brooklyn. There are also many piers, boat tie-ups, and bulkheads throughout the city that support industrial uses. Maintenance of many of these facilities is critical to the efficiency and safety of water-dependent businesses on the working waterfront.

Industrial areas within the city's Coastal Zone contain a wide variety of industrial and commercial uses that support the local and regional economy and provide valuable services for local workers and businesses. Many of these uses are neither water-dependent nor wholly industrial in nature, but nevertheless can support the economic health of an industrial area.

Challenges facing the working waterfront today include promoting more environmentally sustainable business operations along the shore and providing public access where practicable, as described further in Policy 8. In addition, the working waterfront will likely face increasing risks from flooding and storm surges in the future due to climate change. Severe storm events pose potential risks of structural damage, interruption of services and operation, and property loss. In a severe event, hazardous and other industrial materials stored improperly could create environmental hazards and endanger workers, inland residents, and adjacent natural resources. As described further in Policy 6 of the WRP, projects should consider vulnerabilities to and impacts of sea level rise, coastal flooding, and storm surge over their lifespan.

Significant Maritime and Industrial Areas

Working waterfront uses have locational requirements that make portions of the Coastal Zone especially valuable as industrial areas. These areas have been recognized by the designation of the seven Significant Maritime and Industrial Areas (SMIAs): South Bronx, Newtown Creek,

Brooklyn Navy Yard, Red Hook Container Terminal, Sunset Park/Erie Basin, Kill Van Kull, and Staten Island West Shore. (See maps in Part III.) The criteria used to delineate these areas generally include concentrations of M2 and M3 zoned land; suitable hydrographic conditions for maritime-related uses; presence of or potential for intermodal transportation, marine terminal and pier infrastructure; concentrations of water-dependent and industrial activity; relatively good transportation access and proximity to markets; relatively few residents; and availability of publicly owned land. All seven of these areas exhibit combinations of most of these characteristics.

The Arthur Kill Ecologically Sensitive Maritime and Industrial Area

On the northwest waterfront of Staten Island is an area that is particularly well-suited for maritime and industrial uses also possesses significant natural resources and ecological systems. There is no other area within the city's Coastal Zone which presents a similar mix of opportunities and constraints. It is well-suited for a mix of maritime and industrial development, with large tracts of vacant, industrially zoned land, close proximity to the New York Container Terminal, connections to rail and highways, and access to deep water. The area, along with the adjacent SNWA, also includes one of the most extensive concentrations of intact tidal wetlands in the city, rivaled only by Jamaica Bay and East River/Long Island Sound. In addition to tidal wetlands, the area also includes freshwater wetlands, ponds, vernal pools, meadows, grasslands, and woodland pockets. These features provide habitat for a diverse variety of flora and fauna.

Recognizing the need for a balanced relationship between industrial uses and natural resources, this area has been designated an Ecologically Sensitive Maritime and Industrial Area (ESMIA). Many large vacant sites within the ESMIA were historically utilized for industrial uses and are likely in need of remediation. Redevelopment for productive uses presents the opportunity for restoration of adjacent natural resources. Within the ESMIA, activities that support maritime and industrial activity and which are designed to protect and restore natural features and systems are consistent with this policy. Development should avoid disturbing intact wetlands and should concentrate development on degraded inland sites and shorelines that are, or have been in the past, bulkheaded.

Development projects within the ESMIA should utilize sustainable stormwater management, industrial pollution prevention, and other sustainable design strategies to minimize impacts on adjacent resources. Such strategies include but are not limited to vegetated buffers, preservation of hydrological connectivity and natural drainage patterns, use of ecological beneficial edge designs, and minimization of impervious surfaces.

In other areas in or adjacent to the SMIAs where wetlands, RECs, or other significant natural resources are present, development proposals should utilize the principles of and design strategies of ecologically sensitive maritime and industrial development, to the extent practicable.

Policies for the SMIAs and the ESMIA

Within the SMIAs and ESMIA, the goals of the WRP are to support industrial and maritime activity. The policies also support municipal and public utility services and energy generation, in well-suited locations. For projects within SMIAs, Policy 2.1 has priority over all other policies of the WRP. For projects within the ESMIA, Policies 2.2 and 4.2 have priority over all other policies of the WRP. However, all projects should be reviewed with consideration of a site's specific features, its location and all the relevant policies of the WRP.

While the SMIAs and the ESMIA encompass areas best suited for water-dependent uses, they also include much of the city's land zoned for industrial uses. Therefore, the policies of the SMIAs and ESMIA also seek to support the many industrial uses essential to the functioning of the city and the local and regional economy that are not water-dependent and cannot incorporate water-dependent elements. Given the manufacturing zoning and the historic role these areas have played in the city's industrial economy, the largest share of future upland development is likely to be for industrial uses, most of which are as-of-right and therefore not likely to be subject to WRP consistency review.

In some instances, projects that include non-water dependent or non-industrial components can spur investment in waterfront infrastructure, support maritime and industrial uses and contribute to a healthy business environment in the SMIA.

Public investment within the SMIAs and the ESMIA should be targeted to improve transportation access and maritime and industrial operations, with an additional focus on the protection and restoration of natural resources in the ESMIA. Public investment in both the SMIA and ESMIA should integrate sustainable practices, pollution prevention, and climate resilience.

Maintenance dredging is essential to the operation and preservation of working waterfront uses and is consistent with the intent of this policy. The consistency review and determination for such a project should focus on ensuring a beneficial placement method and minimizing impacts on neighboring communities.

Most of the SMIAs and the ESMIA have the site conditions necessary to support the development and expansion of rail freight facilities and intermodal freight movement, in addition to other working waterfront uses. Projects that facilitate, support, or result in the construction and operation of rail freight facilities and intermodal freight transportation support the goals of Policy 2 and the intent of the SMIA or ESMIA designation.

While certain policies are prioritized for projects located within SMIAs and the ESMIA, projects located within those areas must be reviewed for consistency with all other relevant policies in the WRP. For example, while public access is not required for industrial uses, per the Zoning Resolution, the creation of public access areas within SMIAs and the ESMIA is nevertheless encouraged as long as the design of the public areas does not inhibit current or anticipated industrial operations or compromise security or public safety. As per Policy 8, opportunities to incorporate compatible waterfront public access within industrial areas should be considered as part of public and private projects in order to expand public access to waterfront neighborhoods

with limited existing access. For guidance on best practices for designing waterfront public access see Policy 8.6. Public parks, esplanades, piers, and bikeway routes along the industrial waterfront are also not inconsistent with Policy 2 as long as they do not inhibit the efficient operation of maritime and industrial activities or compromise security or public safety. Likewise, as per Policy 4, industrial projects and non-industrial projects located in industrial areas, should use strategies, when practicable, to protect and restore the quality and function of coastal ecological systems. And per Policy 7, to protect public health and safety and natural resources in coastal industrial areas and adjacent communities, best practices for the siting of facilities storing hazardous materials should be utilized to the extent practicable.

Working Waterfront Uses outside the ESMIA or SMIAs

The city's two major airports, by virtue of their location and significance to the local and regional economy, are important waterfront facilities that merit special attention. They are treated as water-dependent uses within the Zoning Resolution. Public actions should ensure that the safety and operational needs of the airports are met while protecting the environmental resources in Jamaica and Flushing Bays to the maximum extent feasible.

Outside the SMIAs or the ESMIA, determination of the suitability of an area for working waterfront uses will depend on the compatibility of these uses with surrounding uses and natural features and an evaluation of the area's long-term best use.

Priority Marine Activity Zones

Areas with a concentration of water-dependent activity or sites that are key nodes in the waterborne transportation network, and which have the infrastructure to support these uses, have been designated as Priority Marine Activity Zones (PMAZs) (see maps in Part III). These shorelines are used for vessel docking, berthing, or tie-up and the shoreline infrastructure, such as bulkheads, docks, piers, and fendering, is designed to support such uses. For purposes of maintaining the city’s waterborne transportation network, actions that affect the design of shoreline structures, in-water structures, and other pieces of infrastructure within the Priority Marine Activity Zones should prioritize designs that accommodate water-dependent uses. In-kind, in-place bulkhead replacement and repair, and replacement of docks or other maritime infrastructure in Priority Marine Activity Zones should be considered maintenance activities and are consistent with Policy 2.

The PMAZs encompass the areas within the seven SMIAs where there is currently a water-dependent industrial use or there is potential for such use given the site and waterway conditions. The PMAZs also include areas outside the SMIAs, such as a portion of the ESMIA, as well as smaller clusters of maritime uses, such as Eastchester, Flushing Bay, and southeast Staten Island. Also included are sites strategic for heavy-lift deliveries.

Related Regulations

Working waterfront uses, regardless of location within or outside an SMIA or the ESMIA, are regulated by other local, state, and national programs with air and water quality standards, as well as requirements for the safe storage and handling of hazardous materials and the

development of emergency preparedness plans. For a list of regulations related to hazardous materials, see Policy 7 of the WRP or Appendix B. In addition, certain City actions pertaining to City uses on the waterfront are subject to the Criteria for Location of City Facilities (The Fair Share Criteria) established by the City Planning Commission pursuant to Section 203 of the New York City Charter.

2.1 Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.

A. Promote the development and operation of maritime and industrial uses and measures that support these uses such as dredging for navigation and maintenance purposes. In some instances, projects that include non-water dependent or non-industrial components can spur investment in waterfront infrastructure, support maritime and industrial uses and contribute to a healthy business environment in the SMIA through enabling the adaptive reuse of buildings, the cleanup of brownfield sites, the provision of services, and improvements to upland infrastructure.

B. Actions that would inhibit the safe and efficient operation of the SMIAs as industrial or maritime areas should be avoided.

C. Maintain sufficient manufacturing zoning in SMIAs to permit the industrial and water-dependent uses that are essential to the city's economy and the operation of utilities, energy facilities and city services.

D. Non-water-dependent uses on in-water or over-water structures should be undertaken in accordance with the Zoning Resolution, and those projects undertaken in non-zoned areas should use the standards of the Zoning Resolution as guidance.

E. Promote the development of temporary and permanent maritime hubs to support maritime operations. Maritime hubs are sites which contain some of the following features: tie-up space, removal of bilges, grey water and sludge, refueling, water and electric connections, crew change capacity, proximity to groceries and restaurants, and proximity to transit. A hub could also integrate commercial, recreational, tourist, and/or educational uses within the same complex. Hubs should be located close to active maritime facilities, anchorage, and berthing locations to minimize travel distances.

F. Promote remediation, redevelopment, and re-use of contaminated sites. Explore opportunities for bioremediation.

G. Target public investment to improve transportation access for maritime and industrial operations. Public investment should integrate sustainable practices, pollution prevention, and climate resilience into the design and operation of facilities.

H. Support the construction and operation of rail freight facilities and intermodal freight transportation.

I. Promote the development and operation of working waterfront uses in a manner that protects the health and well-being of surrounding communities, businesses and local workers, and natural resources. In reviewing proposed projects within SMIAs, consideration should be given to suitable hydrologic and site conditions; presence and condition of waterfront infrastructure; appropriate zoning; proximity and access to rail and truck transportation routes; suitable access to markets, customers and delivery networks; adequate and appropriate buffering from surrounding residents; existing development patterns; sustainable stormwater management strategies; ecologically beneficial edge design, industrial pollution prevention; and other best practices for sustainable development. In areas in or adjacent to the SMIAs where wetlands, RECs, or other significant natural resources are present, development should utilize the principles of and design strategies of ecologically sensitive maritime and industrial development, to the extent practicable.

J. Per Policy 3.5, within Priority Marine Activity Zones, in-kind, in-place replacement and repair of bulkheads, docks, piers, wharves and other maritime infrastructure should be considered consistent; actions which would preclude the subsequent use or future adaptation of the shoreline for vessel docking, berthing, or tie-up should be discouraged; and priority should be given towards shoreline design, erosion prevention, and flood control measures that allow for water-dependent uses. For areas outside the Priority Marine Activity Zones, other WRP goals or economic considerations may take precedence over the preservation or improvement of shorefront infrastructure to support waterborne transportation.

K. Prioritize maritime, maritime support, and water-dependent uses when siting municipal facilities and disposing publicly owned property. Discourage the location of non-water-dependent municipal facilities, other than parks, on sites with waterfront access, unless available upland sites are not feasible or appropriate for the intended use.

2.2 Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.

A. Maritime, industrial, and compatible upland development should be sited so to minimize fragmentation and other negative impacts to the coastal ecosystem as described in Policy 4.2 of the WRP. Development proposals should include features related to the preservation and restoration of ecological systems as determined by site-specific considerations.

B. Evaluate site-specific characteristics when determining whether redevelopment or ecological enhancement is most suitable. For instance, sites with extensive wetlands

should consider ecological enhancement, while sites with extensive prior development, fill, and/or contamination should be considered suitable for industrial development. For sites with an existing bulkhead, or those which have been bulkheaded in the past, the maintenance and preservation of the bulkhead and development of maritime and/or water-dependent uses should be considered suitable. In areas without an existing bulkhead, natural shoreline treatments should be considered. Similarly, upland areas beyond wetland boundaries should be considered suitable for development with appropriate buffer zones, while existing wetlands should be preserved and restored.

C. Encourage measures that restore the shoreline infrastructure for water-dependent use on sites which are best suited to support port and other maritime operations and which do not significantly encroach on natural resources.

D. Per Policy 3.5, within Priority Marine Activity Zones, in-kind, in-place replacement and repair of bulkheads, docks, piers, wharves and other maritime infrastructure should be considered consistent; actions which would preclude the subsequent use or future adaptation of the shoreline for vessel docking or tie-up should be discouraged; and priority should be given towards shoreline design, erosion prevention, and flood-control measures that allow for continuation of water-dependent uses. For areas outside the Priority Marine Activity Zones, other WRP goals, or economic considerations, may take precedence over the preservation or improvement of shorefront infrastructure to support waterborne transportation.

E. Promote the development of temporary and permanent maritime hubs to support maritime operations (see description in 2.1.D).

F. Promote the development and operation of industrial uses in a manner that protects the health and well-being of surrounding communities, businesses and local workers, and natural resources. In reviewing proposed projects within the ESMIA, consideration should be given to suitable hydrologic and site conditions; presence and condition of waterfront infrastructure; appropriate zoning; proximity and access to rail and truck transportation routes; suitable access to markets, customers and delivery networks; adequate and appropriate buffering from surrounding residents; and existing development patterns.

G. Support the construction and operation of rail freight facilities and intermodal freight transportation.

H. Target public investment to improve transportation access for maritime and industrial operations and the protection and restoration of natural resources. Public investment should also be used to support emergency preparedness planning, and the integration of sustainable practices, pollution prevention, and climate resilience into the design and operation of facilities.

I. Utilize stormwater management, industrial pollution prevention, and sustainable development best practices, such as the Staten Island Bluebelt program and other leading industry methods, in the development of maritime and industrial sites so as to promote the preservation and restoration of significant natural resources. Other potential design strategies include, but are not limited to, the use of vegetated buffers, preservation of hydrological connectivity and natural drainage patterns, minimization of impervious surfaces, and ecologically beneficial edge designs.

J. For the planning and design of projects with disturbance over 1 acre—except for maintenance to existing facilities (including in-kind replacement of structures)—a natural resources assessment should be prepared whether or not the project meets the threshold criteria described in Chapter 11, Section 200 of the CEQR Technical Manual. The assessment methodology laid out in Chapter 11, Section 300 of the CEQR Technical Manual should be used as the basis for preparing the natural resources assessment. This assessment should be used to guide site layout and design

K. Where practicable, remediate and restore wetland and other ecological complexes into a connected network so as to improve their survival as natural, self-regulating systems.

L. Promote remediation, redevelopment, and re-use of contaminated sites. Explore opportunities for bioremediation.

M. Encourage the creation of mitigation strategies, such as banking or in-lieu fee programs, in order to further the development of maritime or industrial uses and the preservation, remediation, or restoration of key sites.

2.3 Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.

A. Criteria to determine areas appropriate for working waterfront uses outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area include suitable hydrologic and site conditions; presence and condition of waterfront infrastructure; appropriate zoning; proximity and access to rail and truck transportation routes; suitable access to markets, customers and delivery networks; adequate and appropriate buffering from surrounding residents; and existing development patterns.

B. Promote the development and operation of working waterfront uses in a manner that protects the health and well-being of surrounding communities, businesses and local workers, and natural resources. In reviewing proposed projects, consideration should be given to suitable hydrologic and site conditions; presence and condition of waterfront infrastructure; appropriate zoning; proximity and access to rail and truck transportation routes; suitable access to markets, customers and delivery networks; adequate and appropriate buffering from surrounding residents; existing development patterns;

sustainable stormwater management strategies; ecologically beneficial edge design, industrial pollution prevention; and other best practices for sustainable development.

C. Through continuation of existing zoning regulations and other means, support continuation of industrial uses in those areas outside SMIAs that are well-located relative to customers and delivery networks and adequately buffered from surrounding residences.

D. Permit heliports and other aviation facilities in areas well-situated to serve demand and where impacts on surrounding uses can be minimized.

E. Support improvements to airport operations, passenger and freight access, and cargo-handling facilities.

F. Promote the development of temporary and permanent maritime hubs to support maritime operations (see description in 2.1.D)

G. Promote remediation, redevelopment, and re-use of contaminated sites. Explore opportunities for bioremediation.

2.4 Provide infrastructure improvements necessary to support working waterfront uses.

A. Identify and implement public transportation improvements necessary to provide adequate truck access to working waterfront areas.

B. Maintain and improve intermodal and rail freight facilities where feasible.

C. Maintain and improve shorefront and navigational infrastructure in Priority Marine Activity Zones.

D. Maintain safe navigation and channel depths necessary to accommodate port and other maritime activities, including off-shore channels used to access New York City's waterways and coast.

E. Site port facilities in locations with hydrologic and hydraulic conditions most suited to the vessels.

F. Dredged material must be placed using an approved method at an approved site. Priority for the placement of dredged materials should be given to beneficial uses, such as wetland creation, water quality improvements, beach nourishment, or port redevelopment.

G. Maintain bridges over waterways to support transportation connections. Ensure clearance and safe vessel passage of navigation channels.

2.5 Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.

A. Projects should consider potential risks relating to coastal flooding to features specific to each project, including but not limited to bulkheads, piers, docks, and other pieces of maritime infrastructure; shoreline erosion control structures; critical electrical and mechanical systems; temporary and long-term waste storage areas; fuel storage tanks; and hazardous material storage.

POLICY THREE

PROMOTE USE OF NEW YORK CITY'S WATERWAYS FOR COMMERCIAL AND RECREATIONAL BOATING AND WATER-DEPENDENT TRANSPORTATION.

Introduction

Waterborne activity, both for transportation and recreation, contributes to the economy and quality of life within New York City. The intent of this policy is to promote a wide range of uses on the water, mitigate potential conflicts between various users, and encourage shoreline designs that allow for these uses.

These activities include in-water recreation, which includes swimming, surfing, kayaking, canoeing, rowing and other forms of human-powered boating. There are also other forms of recreation, such as sailing, small motorized crafts, and commercial recreational uses such as excursion boats and fishing party boats. Such activities are compatible with many residential and commercial uses and can locate throughout the waterfront where market and site conditions permit. Maritime centers—such as City Island, Sheepshead Bay, and Great Kills—support concentrations of commercial and recreational boating, as well as other commercial uses. In areas that support concentrations of commercial and recreational boating maritime uses, maintenance activities for these uses have priority over other activities and are generally consistent with this policy of the WRP.

In addition to being a recreational resource, the waterways are important elements of the city's transportation network. This includes passenger transportation—such as ferries, water taxis and cruise ships—and freight transportation, including containers, dry and liquid bulk, break bulk, and heavy construction materials.

Areas with a concentration of water-dependent activity or sites that are key nodes in the waterborne transportation network, and that have the infrastructure to support these uses, have been designated as Priority Marine Activity Zones (see maps in Part III). These shorelines are used for vessel docking, berthing, or tie-up, and the shoreline infrastructure, such as bulkheads, docks, piers, and fendering, is designed to support such uses. In reviewing actions located within these zones, sub-policy 3.5 should be considered the priority policy. For purposes of maintaining the city's waterborne transportation network, actions relating to the design of shoreline structures, in-water structures, and other pieces of infrastructure within the Priority Marine Activity Zones should prioritize designs that accommodate water-dependent uses. In-kind, in-place bulkhead replacement and repair, and replacement of docks or other maritime infrastructure in Priority Marine Activity Zones should be considered maintenance activities and are consistent with Policy 3.

The PMAZs encompass much of the seven Significant Maritime Industrial Areas, as well as smaller clusters of maritime uses, such as Eastchester, Flushing Bay, and southeast Staten Island.

Also included are cruise terminals, ferry landings, large commercial marinas, sites strategic for heavy lift deliveries, and sites strategic for maritime emergency evacuation.

The PMAZs are limited to those areas of the city with a concentration of water-dependent uses and areas that are critical to the city's waterborne transportation network. The development and maintenance of maritime infrastructure in areas outside PMAZs is consistent with this policy, though the design of shoreline structures outside these zones should prioritize other factors beyond marine access, such as wave attenuation and ecological benefits.

In some areas of the city's Coastal Zone, other regulations and special conditions, including the presence of designated historic in-water structures, must be considered that may preclude the ability to provide water-dependent transportation infrastructure on a site.

3.1 Support and encourage in-water recreational activities in suitable locations.

A. Support the provision of launches and platforms for human-powered boating in suitable locations. Criteria for determining a location's suitability should include:
    - adjacent upland and in-water uses;
    - avoidance of U.S. Coast Guard-designated safety and security zones and sensitive ecological areas;
    - health and safety factors including larger vessel traffic, water quality, and presence of detritus;
    - upland attributes including destination and attractions, proximity to parks, boat storage, and proximity to public restrooms;
    - water quality and conditions, including bacterial levels, strength of current, wave and wake action, and water depth;
    - upland transportation including proximity to bike networks and greenways, proximity to mass transit, parking facilities, and on-street parking;
    - community support and need;
    - local business support and opportunities for public/private partnership.

B. At access points for human-powered boating where safety hazards are high, potential safety hazards should be minimized through:
    - operational measures to secure the facility to avoid unmonitored use;
    - appropriate training of users;
    - safety measures to avoid conflicts with commercial vessels, including communication with maritime industrial users;
    - safety measures for avoiding exposure to contaminated water and sediments.

C. Consider public health and safety concerns and the creation of additional public benefit, such as the activation of a public park, in the use of any public funding for recreational boat access points. Additional guidelines developed by the City of New York should be consulted when utilizing public funding or publicly owned land for recreational boat access.

D. Encourage the design of piers and docks to accommodate multiple water-dependent uses. Potential uses may include recreational boating (motorized and human-powered), tie-up for historic and educational ships, and passenger ferries.

E. Incorporate, where feasible and appropriate, safety features on bulkheads and seawalls to allow emergency access from the waterway onto land. These features should not promote entry into the water where conditions may not be appropriate for recreation.

3.2 Support and encourage recreational, educational and commercial boating in New York City's maritime centers.

A. Maintain manufacturing or commercial zoning that permits commercial boat operations, such as commercial excursion boats, nonprofit educational and historic ships, tall ships, large sailing vessels, historic military vessels, historic tug boats, and other large vessels.

B. Develop upland properties in a manner compatible with continued maritime use of the waterfront and that takes advantage of their proximity to the waterfront.

C. Permit maintenance and repair measures that support commercial and recreational boating, including maintenance dredging.

D. Maintain channel depths necessary to accommodate port activity.

E. Reduce potential navigation hazards by minimizing obstruction in coastal waters, managing congestion in harbors and channels, and mediating conflicts among water users.

F. Incorporate consideration of climate change and sea level rise into the planning and design of fixed and floating structures, pursuant to WRP Policy 6.2. Projects should consider resiliency strategies such as increasing piling count and height, replacing deteriorated pilings, installing steel hurricane straps on piers, and replacing lighter floating docks with heavy-duty, modular articulating docks, more robust wave screens, floating breakwaters, and icebreaker systems.

3.3 Minimize conflicts between recreational boating and commercial ship operations.

A. Site recreational boating facilities, particularly those serving vessels with limited power and maneuverability, in waters without heavy concentrations of maritime and industrial, ferry, and commercial vessel activity.

B. Design facilities for recreational vessels so as to protect against strong currents, heavy waves, and wake action. Site mooring or docking facilities for recreational boats in areas

where there is adequate natural protection or where structurally adequate and environmentally sound protection can be created.

C. Ensure marina and boating facility designs are built to accommodate and withstand large wakes and surge in high-traffic areas.

D. In high-traffic waterways, consider designs of in-water and shoreline structures that minimize waves and wakes.

3.4 Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.

A. Provide means to prevent spillage of petroleum products at refueling stations and to clean up when spillage occurs.

B. Minimize runoff from boat yards and service areas to prevent petroleum products, paints, solvents, and other substances harmful to the environment from entering the aquatic environment.

C. Limit discharge of vessel waste into waterways by providing adequate pumpout facilities.

D. Minimize the potential for erosion impacts from new or existing marinas on surrounding natural shorelines, particularly within the Special Natural Waterfront Areas.

E. Consider designs of in-water and shoreline structures that protect and promote intertidal and marine biodiversity.

3.5 In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses

A. In-kind, in-place replacement and repair of bulkheads, docks, piers, wharves, and other maritime infrastructure should be considered consistent with Policy 3.5.

B. Discourage actions which would preclude the subsequent use or future adaptation of the shoreline for vessel docking, berthing, or tie-up.

C. Priority should be given towards shoreline design, erosion prevention, and flood-control measures that allow for continuation of water-dependent uses.

POLICY FOUR

PROTECT AND RESTORE THE QUALITY AND FUNCTION OF ECOLOGICAL SYSTEMS WITHIN THE NEW YORK CITY COASTAL AREA.

Introduction

The coastal ecosystem within New York City is composed of all the migratory and resident wildlife and the diverse vegetation that inhabit the open waters, embayments, rivers, tidal creeks, tidal and freshwater wetlands, coastal lowlands, beaches, offshore islands and adjacent uplands. This ecosystem was once highly ecologically productive, but industrialization and urbanization have resulted in degraded environmental conditions including lost or impaired habitat, poor water quality, and sediment contamination. The parallel goals of this policy are to avoid or minimize any adverse primary or secondary impacts to the coastal ecosystem and to restore ecological systems and habitat where practicable. Impairment to the terrestrial and aquatic habitat areas, functions, and other elements of this ecosystem results from outright physical loss of elements (primary impact), degradation of these elements caused over time by actions within or adjacent to a community (a secondary impact), as well as functional loss caused by the introduction of uses that are disruptive to certain wildlife or plant species. Unavoidable adverse impacts from a proposed project should be minimized and mitigated to the extent practicable.

This policy seeks the protection and, where appropriate, restoration of specific designated natural resources, including state and federal regulated tidal and freshwater wetlands, designated Significant Coastal Fish and Wildlife Habitats, vulnerable plants and animals, rare ecological communities, and natural ecological communities. Many of these resources are presently protected as public parklands, including designated Forever Wild Preserves. The goal of restoration should be to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. The *Hudson Raritan Estuary Comprehensive Restoration Plan* and its Target Ecosystem Characteristics is a useful framework for habitat enhancement objectives. Furthermore, this policy recognizes the importance of maintaining contiguous natural areas to ensure the viability of the natural communities within them. Fragmentation of ecosystems can lead to loss of species that need large expanses or access to several types of habitats in which to breed or feed.

Special Natural Waterfront Areas

The *New York City Comprehensive Waterfront Plan* recognizes large concentrations of important natural coastal features by designating three Special Natural Waterfront Areas (SNWAs): Northwestern Staten Island Harbor Herons Area, Jamaica Bay, and East River Long Island Sound area, which includes a major part of Flushing Bay. (See maps in Part III.) The SNWAs are large areas with significant open spaces and concentrations of the natural resources including wetlands, habitats, and buffer areas described above. Each of the SNWAs has a combination of important coastal ecosystem features, many of which are recognized and protected in a variety of regulatory programs, including the Significant Coastal Fish and Wildlife Habitats, Coastal

Erosion Hazards Areas, and Tidal and Freshwater Wetlands. This policy is applicable to any project proposed within the SNWAs and is the primary policy to be considered. Public investment within the SNWAs should focus on habitat protection and improvement and should not encourage activities that interfere with the habitat functions of the area. Acquisition of sites for habitat protection and actions to restore ecological functions are presumed consistent with the goals of this policy. Further fragmentation or loss of habitat areas within the SNWAs should be avoided and could be the basis for a determination of inconsistency with the WRP.

The Arthur Kill Ecologically Sensitive Maritime and Industrial Area

On the northwest waterfront of Staten Island, land that is particularly well-suited for maritime and industrial uses also possesses significant natural resources and ecological systems. There is no other area within the city's Coastal Zone which presents a similar mix of opportunities and constraints. The area is well-suited for a mix of maritime and industrial development, with large tracts of vacant, industrially zoned land, close proximity to the New York Container Terminal, connections to rail and highways, and access to deep water. The area, along with the adjacent SNWA, also includes one of the most extensive concentrations of intact tidal wetlands in the city, rivaled only by Jamaica Bay and East River/Long Island Sound. In addition to tidal wetlands, the area also includes freshwater wetlands, ponds, vernal pools, meadows, grasslands, and woodland pockets. These features provide habitat for a diverse variety of flora and fauna.

Recognizing the need for a balanced relationship between industrial uses and natural resources, this area has been designated as an Ecologically Sensitive Maritime and Industrial Area (ESMIA). Many large vacant sites within the ESMIA were historically utilized for industrial uses and are likely in need of remediation. Redevelopment for productive uses presents the opportunity for restoration of adjacent natural resources. Within the ESMIA, activities which support maritime and industrial activity and which are designed to protect and restore natural features and systems are consistent with this policy. Development should avoid disturbing intact wetlands and should concentrate development on degraded inland sites and shorelines which are, or have been in the past, bulkheaded.

Development projects within the ESMIA should utilize sustainable stormwater management, industrial pollution prevention, and other sustainable design strategies to minimize impacts on adjacent resources. Such strategies include, but are not limited to, vegetated buffers, preservation of hydrological connectivity and natural drainage patterns, use of ecological beneficial edge designs, and minimization of impervious surfaces.

In other areas in or adjacent to the SMIAs where wetlands, RECs, or other significant natural resources are present, development proposals should utilize the principles of and design strategies of ecologically sensitive maritime and industrial development, to the extent practicable.

Recognized Ecological Complexes

This policy also recognizes the presence of other ecological complexes where clusters of valuable natural features are somewhat more fragmented than those in the SNWAs and are

often interspersed with developed sites. Referred to herein as Recognized Ecological Complexes (RECs), many of these sites are within protected parkland or areas designated as Forever Wild Preserves. The designation of these sites was based on priority acquisition or restoration list from science-based plans and reports—including the Hudson Raritan Estuary Comprehensive Restoration Plan from the U.S. Army Corps of Engineers; the Buffer the Bay, Buffer the Bay Revisited, and An Islanded Nature reports from the Trust for Public Land and NYC Audubon; the Natural Areas Initiative by NYC Audubon; the New York State Open Space Conservation Plan; the Jamaica Bay Watershed Protection Plan; the Bronx River Intermunicipal Watershed Protection Plan, and the Comprehensive Conservation and Management Plan from the U.S. Environmental Protection Agency PA/ NY-NJ Harbor Estuary Program. Some of these sites are substantially environmentally deteriorated and require an active approach to restoration. Projects located within a Recognized Ecological Complex (as indicated in the maps in Part III) should consider further investigation into the exact locations of natural resources in these sites and should consider means to promote their preservation, restoration, and/or remediation.

Related Regulations

Guidance for activities in and adjacent to tidal and freshwater wetlands is provided by State and Federal wetlands laws, including the NYS Freshwater Wetlands Act, the NYS Tidal Wetlands Act, and NYS Stream Protection Act, as well as the Federal Water Pollution Control Act (Clean Water Act) Section 401 Water Quality Certification, and the Federal Water Resources Development Act, or their successors.

4.1 Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.

A. Avoid activities that may cause or cumulatively contribute to permanent adverse changes to the ecological systems and their natural processes. When avoidance is not possible, minimize the impacts of the project to the extent feasible and mitigate any physical loss or degradation of ecological elements. Use mitigation measures that are likely to result in the least environmentally damaging feasible alternative.

B. Avoid fragmentation of natural ecological communities and maintain corridors to facilitate the free exchange of biological resources within and among these communities. Protect those sites which have been identified as key to maintaining habitat connections within ecological systems.

C. To the extent practicable, remediate and restore ecological systems so as to ensure their continued existence as natural, self-regulating systems.

D. Utilize stormwater management best practices, industrial pollution prevention, and other sustainable development strategies to reduce impacts of development on natural resources. Potential design strategies include, but are not limited to, the use of

vegetated buffers, preservation of hydrological connectivity and natural drainage patterns, and minimization of impervious surfaces.

E. Protect non-invasive plants from excessive loss or disturbance, and encourage greater quantity and diversity of non-invasive plants to the extent practicable. Select plants that are resilient to current and future changes in climate. Avoid use of invasive plants except in ornamental gardens, as collector specimens, or for erosion control, filtration, or phytoremediation, provided that it is not feasible to use non-invasive species to perform the same functions. Avoid use of non-indigenous plants that are invasive species likely to alter existing natural community composition. Where destruction or significant impairment of non-invasive plants cannot be avoided, the potential impacts of land use or development should be minimized and any resulting losses of non-invasive plants mitigated to the extent practicable.

F. For the planning and design of projects with disturbance over 1 acre—except for maintenance to existing facilities (including in-kind replacement of structures)—a natural resources assessment should be prepared whether or not the project meets the threshold criteria described in Chapter 11, Section 200 of the CEQR Technical Manual. This assessment should be used to guide site layout and design. The assessment methodology laid out in Chapter 11, Section 300 of the CEQR Technical Manual should be used as the basis for preparing the natural resources assessment.

G. Target public investment towards habitat protection and improvement. Avoid public investment which would interfere with the habitat functions of the area. Pursue acquisition of sites for habitat protection.

4.2 Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.

A. Avoid activities that may cause or cumulatively contribute to permanent adverse changes to the ecological systems and their natural processes. When avoidance is not possible, minimize the impacts of the project to the extent feasible and mitigate any physical loss or degradation of ecological elements. Use mitigation measures that are likely to result in the least environmentally damaging feasible alternative.

B. Avoid fragmentation of natural ecological communities and maintain corridors to facilitate the free exchange of biological resources within and among these communities. Protect those sites which have been identified as key to maintaining habitat connections within ecological systems.

C. To the extent practicable, remediate and restore ecological systems so as to ensure their continued existence as natural, self-regulating systems.

D. Utilize stormwater management best practices, industrial pollution prevention, and other sustainable development strategies to reduce impacts of development on natural resources. Potential design strategies include, but are not limited to, the use of vegetated buffers, preservation of hydrological connectivity and natural drainage patterns, minimization of impervious surfaces, and ecologically beneficial edge designs.

E. Protect non-invasive plants from excessive loss or disturbance and encourage greater quantity and diversity of non-invasive plants to the extent practicable. Select plants that are resilient to current and future changes in climate. Avoid use of invasive plants except in ornamental gardens, as collector specimens, or for erosion control, filtration, or phytoremediation, provided that it is not feasible to use non-invasive species to perform the same functions. Avoid use of non-indigenous plants that are invasive species likely to alter existing natural community composition. Where destruction or significant impairment of non-invasive plants cannot be avoided, the potential impacts of land use or development should be minimized and any resulting losses of non-invasive plants mitigated to the extent practicable.

F. Development proposals in the ESMIA should include features relating to the preservation and restoration of ecological systems as determined by site-specific considerations.

G. Site-specific characteristics should be considered when determining whether redevelopment or ecological enhancement should be considered most suitable. For instance, sites with extensive wetlands should consider ecological enhancement, while sites with extensive prior development, fill, and/or contamination should be considered suitable for industrial development. For sites with an existing bulkhead, or those which have been bulkheaded in the past, the maintenance and preservation of the bulkhead and development of maritime and/or water-dependent uses should be considered suitable. In areas without an existing bulkhead, natural shoreline treatments should be considered. Similarly, upland areas beyond wetland boundaries should be considered suitable for development, while existing wetlands should be preserved and restored. In areas in or adjacent to the SMIAs where wetlands, RECs, or other significant natural resources are present, development utilize the principles of and design strategies of ecologically sensitive maritime and industrial development, to the extent practicable.

H. For the planning and design of projects with disturbance over 1 acre—except for maintenance to existing facilities (including in-kind replacement of structures)—a natural resources assessment should be prepared whether or not the project meets the threshold criteria described in Chapter 11, Section 200 of the CEQR Technical Manual. This assessment should be used to guide site layout and design. The assessment methodology laid out in Chapter 11, Section 300 of the CEQR Technical Manual should be used as the basis for preparing the natural resources assessment.

I. Target public investment to improve transportation access for maritime and industrial operations and the protection and restoration of natural resources. Public investment

should also be used to support emergency preparedness planning and the integration of sustainable practices, pollution prevention, and climate resilience into the design and operation of facilities.

4.3 Protect designated Significant Coastal Fish and Wildlife Habitats.

A. Protect designated Significant Coastal Fish and Wildlife Habitats from land or water uses or development which would:
    - Destroy habitat values associated with the designated habitat through direct physical alteration, disturbance, or pollution, or indirect effects of actions that would result in a loss of habitat; or
    - Significantly impair the viability of the designated habitat beyond the tolerance range of important fish or wildlife species which rely on the habitat values within the designated area through: degradation of existing habitat elements, change in environmental conditions, functional loss of habitat values, or adverse alteration of physical, biological, or chemical characteristics.

B. Where destruction or significant impairment of habitat values cannot be avoided, the potential impacts of land use or development should be minimized and any resulting losses of habitat mitigated to the extent practicable.

C. Protect non-invasive plants from excessive loss or disturbance and encourage greater quantity and diversity of indigenous plants to the extent practicable. Select plants that are resilient to current and future changes in climate. Avoid use of invasive plants except in ornamental gardens, as collector specimens, or for erosion control and filtration, or phytoremediation, provided that it is not feasible to use non-invasive species to perform the same functions. Avoid use of non-indigenous plants that are invasive species likely to alter existing natural community composition. Where destruction or significant impairment of non-invasive plants cannot be avoided, the potential impacts of land use or development should be minimized and any resulting losses of non-invasive plants mitigated to the extent practicable.

4.4 Identify, remediate and restore ecological functions within Recognized Ecological Complexes.

A. Projects located within a Recognized Ecological Complex should consider the following:
    - Further identification of natural resources through consulting relevant science-based plans and studies listed in the introduction to Policy 4.
    - The use of design features to incorporate restoration objectives, as identified in the relevant science-based plans and studies listed in the introduction to Policy 4.
    - Remediation, protection, and restoration of ecological complexes so as to ensure their continued existence as natural, self-regulating systems.

4.5 Protect and restore tidal and freshwater wetlands.

A. Prevent the net loss of wetlands by: (1) avoiding the draining of, placement of fill in or excavation of wetlands; (2) minimizing adverse impacts resulting from unavoidable draining, fill, excavation or other activities; or (3) providing mitigation for any adverse impacts which may remain after all appropriate and practicable minimization measures have been taken. These are presented in order of descending preference with (1) being the most effective and preferred option.

B. Maintain or create resilient vegetative buffers between wetlands and nearby uses to protect the wetland's character, quality, values, and functions. Buffers should be designed and maintained to preserve hydrologic balance within the wetland and between the wetland and surrounding upland area. The adequacy of the buffer width and composition is determined by: (1) the potential for adverse effects associated with the proposed or existing use; (2) the nature and importance of the wetland and its benefits to the ecological complex; (3) the direction and flow of surface water between a use and the wetland; and (4) the necessity to achieve and maintain a high filtration efficiency or surface runoff as determined by vegetative cover type, soil characteristics, and slope of land. In all cases, the buffer must not be less than that required by state law. If site constraints do not allow sufficient buffer width, consider other management measures or design alternatives to preserve or achieve hydrologic balance.

C. In the SNWAs, ESMIA, and Recognized Ecological Complexes, restore tidal wetlands and freshwater wetlands wherever practicable to foster their continued existence as natural, self-regulating systems. As site conditions require, wetlands restoration efforts should include reconstruction of lost physical conditions to maximize wetlands values, adjustment of altered chemical characteristics, reintroduction of indigenous flora to emulate natural conditions, and enhancement of adjacent areas to provide natural buffers to wetlands.

D. Promote restoration of City-owned wetlands.

E. To address unavoidable impacts, encourage the creation of wetland mitigation strategies, such as banking or in-lieu fee programs, in order to further the preservation, remediation or restoration of key sites.

4.6 In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.

A. When appropriate and practicable, projects should be designed to:
    - Restore and protect roosting, nesting, and foraging habitat for long-legged wading bird on islands.

- Create and restore coastal and maritime forests.
- Create and improve functionally related habitat for aquatic species, including but not limited to oysters, mussels, eelgrass, fish, and crab.
- Create and restore shorelines, shallows, and intertidal areas.
- Reconnect freshwater streams and inland habitats.

B. Ecosystem restoration should include clear and specific short- and long-term goals and success criteria. Design should include consideration of site-specific hydrology, wave and surface flow, light conditions, and soil characteristics. When practicable, monitor the results of restoration projects to advance the science and practice of restoration methods.

C. Incorporate consideration of climate change and sea level rise into the planning and design of restoration projects, pursuant to WRP Policy 6.2. Projects should consider potential risks to features specific to each project, including but not limited to plant selection, topography, and hydrological connections.

D. Consider designs for shorelines and in-water structures that promote ecological functioning. For instance, avoid smooth vertical surfaces and use materials that support marine life.

4.7 Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.

A. Avoid harming vulnerable fish and wildlife species, which are those listed in regulation 6 NYCRR Part 182.5 as Endangered Species, Threatened and Special Concern Species, and the habitat of listed species during all stages of their life cycles.

B. Protect vulnerable plant species, which are those listed in regulation 6 NYCRR Part 193.3 as Endangered Species, Threatened Species, Exploitable Vulnerable Species and Rare Species, and the habitats of listed species necessary to their survival.

C. Protect rare ecological communities, which include those that qualify for a Heritage State Rank of S 1, S2, S3 or an Element Occurrence Rank of A (ECL 11-0539).

4.8 Maintain and protect living aquatic resources.

A. Promote sustainable commercial and recreational use of living aquatic resources and efforts to restore fish and shellfish populations. The scale and method of harvest should be appropriate for the resources and the physical characteristics of the harvest area. Promote harvesting of shellfish stock for depuration and for relays by nearshore hand harvesters.

B. Protect native stocks and maintain sustainable populations of indigenous fish and wildlife species and other aquatic living resources, including shellfish. Protect spawning grounds, habitats, and water quality to preserve aquatic resources.

C. Artificial stocking should only be undertaken when it will not result in loss of the genetic integrity of native populations. Prevent the introduction of non-indigenous species into natural environments unless it is part of an approved pest-control program.

D. Protect native stocks from potential adverse biological impacts due to aquaculture. Provide leases of state-owned underwater lands for aquaculture only in areas that are not significant shellfish-producing areas or that are not supporting significant shellfish hand harvesting.

POLICY FIVE

PROTECT AND IMPROVE WATER QUALITY IN THE NEW YORK CITY COASTAL AREA.

Introduction

The purpose of Policy 5 is to protect the quality and quantity of water in the New York City Coastal Zone. Quality considerations include management of pollution from both point and non-point sources. Nonpoint pollution often occurs as a result of rainfall or snowmelt moving over the ground towards waterways. As the runoff moves, it picks up and carries away pollutants which are then deposited into creeks, wetlands, and coastal waters. Given their proximity to waterways, sites within the Coastal Zone are more likely to generate nonpoint pollution. Quantity considerations include approaches for ensuring that wetlands and natural areas receive sufficient quantities of water to sustain or improve their functioning, which in turn will preserve and maintain water quality.

Throughout the 19th and much of the 20th centuries, widespread waterfront industry and an inadequate municipal sewer system degraded the quality of New York's waterways through the direct discharge of pollutants into the water. However, in recent decades, thanks to the investment of billions of dollars in new and upgraded infrastructure by New York City, 95% of New York Harbor meets water quality standards for boating, while 14 miles of public beaches offer access to clean, swimmable water.

Nevertheless, New York still faces a number of challenges to restoring its aquatic ecosystems and making its waters safe and accessible for human recreation. First, substantial filling and dredging operations have significantly altered the bathymetry of many waterbodies, leading to reduced tidal flushing and circulation. Second, water released from wastewater treatment plants contains high levels of nutrients such as nitrogen, which can lead to eutrophic conditions and seasonal algal glooms. Third, during heavy rains, so as to not overburden the capacity of sewage treatment plants and create sewer back-ups into homes and businesses, regulators release a dilute mixture of sanitary water with mostly stormwater—referred to as combined sewer overflows (CSOs)—into surrounding waterways. Though their frequency and volume have decreased considerably in recent decades in large part due to the City's infrastructure investment upgrade program, CSOs still contribute to New York's water pollution. In addition, New York's legacy of industrialization continues to impair its water quality, as, even today, residual contaminants in sediments erode aquatic ecosystems. Finally, over the course of the development of the New York City region, coastal wetlands—which serve as both vital habitats and natural water filtration systems—have been reduced to about a tenth of their original land coverage, further limiting water quality and marine biodiversity.

Policy 5 aims to promote New York's water quality through infrastructure improvements, innovative greening strategies, and promoting and enhancing biodiversity and ecological function. This includes investments in cost-effective "grey infrastructure" improvements, such as capacity increases at wastewater treatment plants or the construction of new detention facilities

and pumping stations, as well as sustainable "green infrastructure," such as blue roofs for stormwater catchment or porous pavement and enhanced tree pits for stormwater absorption. This also includes restoring aquatic and adjacent upland ecosystems.

Related Regulations
Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) requires coastal states with approved coastal zone management programs to address nonpoint pollution impacting or threatening coastal waters. All projects that involve discharges to waterbodies are subject to state and local water quality standards and regulations. Specific nonpoint pollution management measures are presented in Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (U.S. EPA, 840-B-92-002).

The discharge of wastewater into surface or groundwater is regulated by the NYS Dept. of Environmental Conservation under the State Pollutant Discharge Elimination System (SPDES). As part of the SPDES permitting process, a Stormwater Pollution Prevention Plan (SWPPP) must be developed for construction areas greater than one acre in separate sewer or direct discharge areas, which are common along the waterfront. The SWPPP must outline and describe stormwater controls for during and post-construction.

5.1 Manage direct or indirect discharges to waterbodies.

A. Minimize the negative impacts to fish and wildlife habitats caused by artificial input of large quantities of freshwater into tidal or brackish waterbodies and enhance freshwater inputs when it can be demonstrated that there will be ecological benefits.

B. Minimize the negative impacts to fish and wildlife habitats caused by effluent discharge that result in thermal changes from steam generating, heating, air conditioning, and industrial facilities.

C. Limit discharge of vessel wastewaters into waterways by providing adequate pumpout facilities.

5.2 Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.

A. Use sustainable stormwater management strategies, such as green infrastructure, use of permeable surfaces, on-site detention, and the preservation and enhancement of vegetation, wetlands, and ecosystems to minimize nonpoint discharge into coastal waters of excess nutrients, organics, eroded soils, and pollutants, and to control stormwater runoff from roadways and other developed areas.

B. Minimize nonpoint source pollution of coastal waters using the following approaches listed in order of priority: (1) avoid pollution by limiting sources; or (2) reduce pollutant loads to recipient waters by managing unavoidable sources.

C. Limit sources of atmospheric deposition of pollutants to New York City waterbodies and streams, particularly from nitrogen sources, which may deteriorate water quality or impair aquatic habitats.

D. As described in WRP Policy 7.1, use accepted best management practices to prevent the run-off of pollutants and potentially contaminated sediment into waterways.

5.3 Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.

A. Undertake dredging in coastal waters and dredge placement in a manner that meets state and federal dredging permit requirements, protects significant coastal fish and wildlife habitats, natural protective features, wetlands and aquatic resources, and, where feasible, maintains and is consistent with the ecological resources.

B. Ensure that excavation and fill operations are protective of the environment and meet state standards for physical factors, such as pH, dissolved oxygen, dissolved solids, nutrients, odor, color and turbidity; health factors such as pathogens, chemical contaminants, and toxicity; and aesthetic factors such as oils, floatables, refuse, and suspended solids.

C. Minimize potential negative impacts on aquatic life during excavation or placement of fill by using appropriate and effective containment methods, clean fill material, and appropriate scheduling of operation.

5.4 Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.

A. Determination by the state of coastal water classifications and water quality standards should be based in part on the upland land use policies and on the existing and intended waterfront functions.

B. Minimize disturbance of streams including their beds and banks. Prevent erosion of soil, increased turbidity, and irregular variation in velocity, temperature, and level of water.

C. Maintain the viability of small streams and wetlands by protecting the quantity of water that feeds these areas.

5.5 Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.

A. The following strategies should be considered as potential means to protect and improve water quality:

- Upgrade wastewater treatment plants to achieve secondary treatment standards.
- Upgrade treatment plants to reduce nitrogen discharges.
- Complete cost-effective grey infrastructure projects to reduce CSOs and improve water quality.
- Construct necessary sewer system improvements to support current residents and future growth, and optimize the existing system.
- Replace combined sewers with separate storm and/or sanitary sewers to enhance capacity in combined sewer systems.
- Encourage in-water pilot projects, such as mollusks and submerged aquatic vegetation, to filter water pollutants.
- Utilize dredging and the placement of dredged material in tributaries to remove accumulated sediments, related odors, improve circulation, and improve aesthetics for surrounding communities.
- Construct sediment and floatables control at discharge points including outfalls.
- Install instream aeration and destratification facilities in tributaries with low dissolved oxygen levels.
- Replace bulkheads and rip-rap with soft shorelines and terracing of bulkheads for maximum ecological value.

POLICY SIX

MINIMIZE LOSS OF LIFE, STRUCTURES, INFRASTRUCTURE, AND NATURAL RESOURCES CAUSED BY FLOODING AND EROSION, AND INCREASE RESILIENCE TO FUTURE CONDITIONS CREATED BY CLIMATE CHANGE.

Introduction

This policy aims to reduce flooding and erosion hazards in order to protect life, structures, infrastructure, and natural resources. Much of New York City's social, economic, cultural, and natural resources are located in coastal areas that have risks from flooding and erosion. Storms such as Hurricanes Irene and Sandy have shed light on vulnerabilities facing waterfront communities that exist in the City today, and that are likely to increase due to climate change and sea level rise in the future. These risks should be identified and adaptive measures to manage these risks incorporated to the extent appropriate or practicable. In addition, new projects in coastal areas should be planned and designed to reduce risks posed by current and future coastal hazards and encourage the efficient use of public funding.

Climate Resilience

Climate change, a result of global greenhouse gas emissions, is expected to cause sea levels to rise, which will increase the risks of coastal flooding, storm surges, and erosion to New York City's Coastal Zone. The New York City Panel on Climate Change (NPCC), a group of leading climate change scientists and legal, insurance, and risk-management experts, was convened by the City to develop New York City-specific climate change projections.

These types of long-term projections necessarily include a degree of uncertainty regarding the rate and magnitude of sea level rise. Appendix D contains the latest projections for climate change. The NPCC may periodically issue updated climate change projections based on new data or analysis. While projections will continue to be refined in the future, current projections are useful for present planning purposes. It is anticipated that further adaptive actions can be taken in the future, when more refined projections become available. The intent of this policy is to facilitate decision-making in the present that can reduce existing and near-term risks without impeding the ability to take more informed adaptive actions in the future.

New York City is pursuing many initiatives to reduce greenhouse gas emissions. Following Hurricane Sandy, the Mayor's Special Initiative for Rebuilding and Resiliency identified ways to increase the resilience of the city's built and natural environments. Resilience is understood as the ability of systems and structures to withstand and recover quickly and independently from regionally characteristic and severe climate events. Because certain risks are unavoidable, a resilience strategy should not seek to eliminate all risks. Instead, public and private actors must identify and manage risks, take steps to minimize danger to lives and damage to property and natural systems from flooding and storms, and limit disruptions from storm events and the recovery time after such events. Building resilience will require actions not only by government, but also by utilities, private property owners, local residents, community-based organizations, local community groups, and businesses. Building resilience will also require regional

coordination of public and private entities to develop plans that address region-wide issues and strategies.

Climate Resilience Strategies

Techniques to manage risks posed by flooding and erosion include the use of hard shoreline protection structures (such as bulkheads, revetments, flood gates, levees, or other permanent or temporary barriers), soft shoreline protection strategies (such as beach nourishment, vegetative plantings, or the creation or enhancement of wetlands, barrier islands, or reefs), the raising of land or the placement of fill to elevate projects above flood levels, the use of structures designed to resist or accommodate flooding, and/or non-structural measures such as the relocation of existing uses and restrictions on future uses. The study of how to assess and manage future climate risks is evolving, and many innovative strategies should be further studied and examined through pilot projects to increase the options available to address climate change.

The appropriate techniques for a given project depend on case-by-case considerations, including site-specific vulnerabilities and risks, impacts on adjacent sites and communities, wave and current action, density and land use, proximity of infrastructure, scale, and project life cycle, as well as consideration of all other relevant policies of the WRP. In addition, the costs and benefits of incorporating the resilience strategy, and the costs and benefits of the project as a whole, should be taken into consideration in determining an appropriate resilience strategy. When practicable, strategies to address flooding and erosion should advance the other goals of the WRP. For instance, a well-designed flood and storm surge protection project could also include public access and intertidal habitat.

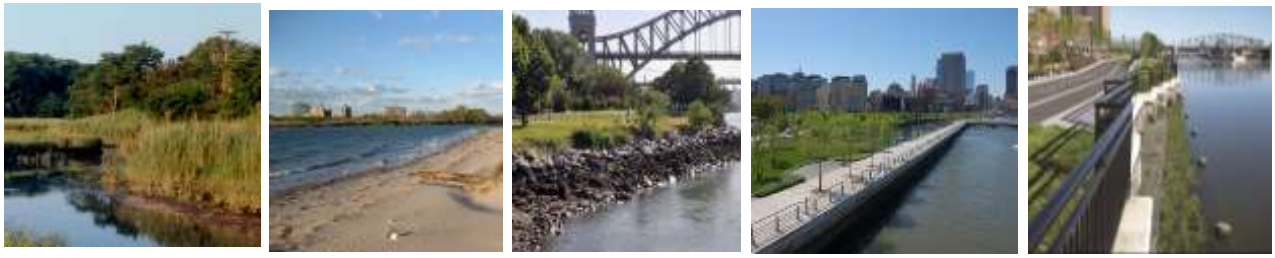
Depending on the location of a specific site, existing/proposed uses, and the nature of a given project, the priorities of different policies should influence the decision for which strategies to employ. For instance, measures that protect or adapt existing uses and structures (without retreat or relocation) are most likely to be appropriate for the developed areas of New York City's Coastal Zone where significant existing private and public investments—including development; infrastructure and parkland; and regionally significant economic, social, and cultural activity—make retreat impractical and undesirable.

Shoreline Design

Natural shorelines—such as beaches, wetlands, and dunes—protect inland areas from flooding and storm surges and provide stormwater filtration, ecosystem habitat, and recreation. When practicable, nearshore areas and riparian edges should be preserved, restored, and enhanced to protect significant public infrastructure investment and reduce coastal hazard impacts. Barrier landforms that protect significant public investment or natural resources should be maintained or restored. The benefits of erosion and flooding control structures should be balanced against the impacts upon adjacent properties and to the waterbody as a whole, which can include increased erosion, aesthetic impairments, loss of public recreational resources, loss of habitats, and water quality degradation.

It is a goal of this policy to employ measures most suited to the use and condition of differing locations in order to avoid haphazard use of structural measures that can exacerbate erosion. Maritime infrastructure—such as bulkheads, piers, and docks—and other shoreline treatments that support water-dependent uses are essential to the function of both Significant Maritime and Industrial Areas (SMIAs) and Priority Marine Activity Zones (PMAZs). Within these areas, designs for flood and erosion protection that preserve the usability of the shoreline for maritime activity should have precedence over other designs. Within the Special Natural Waterfront Areas (SNWAs), protection of the natural shoreline and ecologically beneficial shoreline treatments have priority over other erosion and flood control methods. Within the Arthur Kill ESMIA, specific site characteristics and uses should determine which erosion and flood control methods are most appropriate. For instance, for projects that include water-dependent uses on previously bulkheaded sites, the maintenance and replacement of bulkheads or other shoreline protective measures typically takes precedence. For sites with no existing bulkhead and where there has been limited disturbance to wetlands, natural shoreline measures should have precedence. Hybrid shoreline treatments—such as tiered sea walls with marsh plantings, which integrate benefits of both hard and soft shorelines—should be employed in place of hard shoreline strategies when practicable. In addition, the use of materials and structures that promote intertidal and aquatic habitat with valuable ecosystem services should be utilized when practicable. See figure 6.1 for illustrative examples of some shoreline flooding and erosion strategies.

FIGURE 1: Illustrative examples of Shoreline Design



Marsh | Sand | Rip-rap or revetment | Bulkhead | Hybrid

Related Regulations and Programs

Guidance for construction and renovation of residential and non-residential structures in identified flood hazard areas is found within the floodplain management statutes and regulations, including New York City Administrative Code, Title 28, Article 10: General Limitations on Occupancy and Construction within Special Flood Hazard Areas, §27-316 and §27:317 (often referred to as Local Law 33 of 1988). Guidance for activities in identified erosion hazard areas is contained within the New York State Coastal Erosion Hazard Area statutes and regulations. Compliance and coordination with emergency preparedness plans is another important means of minimizing loss due to coastal hazards. The New York City Office of Emergency Management maintains plans to respond to specific events, including a Coastal Storm Plan.

6.1 Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.

A. Where shoreline protection is necessary to protect development, it should incorporate climate change projections into its design, pursuant to Policy 6.2.

B. Shoreline protection can be structural, natural, or a hybrid. An appropriate form of shoreline protection should protect public health and safety while minimizing impacts on ecosystems and public access.

C. Development and other investments of private and public funds should be located and designed in a manner that minimizes or eliminates potential risks from flooding and other coastal hazards with minimal impacts on ecological resources and public access. If feasible, locating non-water-dependent development and structures away from flooding and erosion hazards is the most effective means of achieving this option.

D. Design projects so that they do not adversely affect adjacent shorelines or properties by exacerbating flooding or erosion.

E. Maximize the flooding and erosion protective capacities of natural shoreline features while minimizing interference with natural coastal processes to avoid adverse effects on the shoreline. Generally, protection, maintenance, and restoration of natural coastal processes and shoreline features are preferred over use of structural measures, unless hardened shoreline treatments are necessary (as described in 6.1.F). Shoreline treatments that provide for ecological function, including hybrid approaches, are preferred within the SNWAs, sites with natural resources within the ESMIA, and Recognized Ecological Complexes.

F. In SNWAs, RECs, sites with natural resources in the ESMIA, and wherever else achievable, use salt-water-tolerant plantings and other non-structural measures that have a reasonable probability of managing flooding and erosion based on site characteristics including wave action, exposure, geometry and sediment composition. Plantings should also be used to increase protective capacities of natural protective features at every opportunity and in combination with other types of measures. Use plantings alone to control erosion in areas where the potential success rate for vegetative methods is high.

G. Use hardened shoreline treatments (concrete, steel, vinyl, etc) where hazard avoidance using non-structural measures is not practicable, and provide mitigation where structural measures will increase severity of the hazard to surrounding public and private property. Allow use of hard structural measures within the SMIAs and Priority Marine Activity Zones where such measures will either support the maintenance or development of infrastructure for water-dependent uses or will support industrial uses. In areas with extensive use of hard structural measures, protect upland development and investment

by supporting efforts to close gaps in the hardened shoreline, repair breaches, and maintain the structure.

6.2 Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*) into the planning and design of projects in the city's Coastal Zone.

A. In the planning and design of all projects—except for the maintenance or in-kind, in-place replacement of existing facilities—identify the potential vulnerabilities of the project to the effects of sea level rise, coastal flooding, and storm surge over its usable life and the general consequences to the project of these types of events. This analysis should be conducted by an architect, engineer or other qualified professional. For projects with a usable lifespan beyond the timeframe of any available projections, the furthest projection by the New York City Panel on Climate Change shall be used. The scope of the analysis should take into account the nature of the action subject to consistency review, as well as the size and location of the project, and must examine, as applicable:
    - Current conditions and the projected conditions with sea level rise and climate change.
    - Features of the project likely to be vulnerable to temporary flooding, frequent inundation, wave action, or erosion. Vulnerable features may include, for example, residential living areas, workplace areas, public access areas, plants and materials, critical electrical and mechanical systems, temporary and long-term waste storage areas, fuel storage tanks, energy generators, hazardous materials storage, or maritime infrastructure.
    - The general consequences of temporary flooding, frequent inundation, wave action, or erosion with respect to such vulnerable features.
    - The best available flood zones as established by FEMA, any associated base flood elevation, and the range of the projected future flood elevations based on sea level rise projections, as available.

B. Identify and incorporate design techniques in projects that address the potential vulnerabilities and consequences identified and/or enhance the capacity to incorporate adaptive techniques in the future. Climate resilience techniques shall aim to protect health and well-being, minimize damage to systems and natural resources, prevent loss of property, and, to the extent practicable, promote economic growth and provide additional benefits such as provision of public space or intertidal habitat. The appropriate techniques for a given project depend on case-by-case considerations, including such factors as the project's lifespan, the costs, benefits and feasibility of incorporating a technique, and the potential adverse or positive effects of the techniques on ecological health, public health, urban design, economic activity, and public space. To the extent that potential techniques are identified but not incorporated, an explanation shall be provided as to why incorporating such techniques are not

appropriate or practicable for the given project, or how the project may be adapted to incorporate such measures in the future. The following are examples of potential techniques to be considered and incorporated into project design, as appropriate:

- Features which increase the project's ability to withstand sea level rise, coastal flooding and storm surge.
- Openings that allow the flood waters to enter and leave without causing disruption.
- Opportunities to elevate, encase, or design electrical and mechanical equipment to be submersible.
- Use of flood- and salt-water-resistant materials.
- Elevation of structures and usable space within a project to an appropriate design flood elevation that reduces risk with minimal impacts on public space and urban design. The selection of an appropriate design flood elevation shall consider projections of climate risks, the lifespan of the project, and specific risks associated with the project.
- The raising of land or the placement of fill to elevate projects above projected future flood levels.
- Selection of plantings suited to the current and projected future climate including selection of salt-water-tolerant species.
- Securing, elevating, or locating outside of the flood zones hazardous materials, temporary and long term waste storage areas, and/or fuel storage tanks to protect against the impacts of flooding and wave action due to storm surge.
- Incorporation of structural and non-structural shoreline treatments to attenuate waves and protect inland areas from coastal flooding.
- Incorporation of design features that allow projects to be adapted on an ongoing basis in response to changing climate projections and conditions

C. Where opportunities exist, new structures directly on waterfront sites should incorporate site features to reduce the impacts of flooding, storm surge and wave action on inland structures and uses.

6.3 Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.

A. Implement public structural flood and erosion control projects when public economic and environmental benefits exceed public economic and environmental costs. Factors that may be considered in determining public benefit attributable to flood or erosion control measures include economic benefits derived from protection of water-dependent commerce and public infrastructure, protection or enhancement of significant natural resources, or protection of public open space and recreation facilities, or enhancement of the public realm through multifunctional coastal protection design.

B. Give priority to actions that protect public health and safety, mitigate flooding and erosion problems caused by past public actions, protect areas of intensive development,

protect substantial public investment, and incorporate multi-functional designs that enhance natural habitats and public open space.

C. Incorporate dunes into beach nourishment projects. The design of dunes should consider the incorporation of vegetated dunes, reinforced dunes with hardened cores, and double-dune systems consisting of primary and secondary dunes.

6.4 Protect and preserve non-renewable sources of sand for beach nourishment.

A. Protect sources of beach nourishment sands from excessive depletion. Weigh proposals to excavate sand from publicly owned lands against future public needs for the sand.

B. Protect sources of beach nourishment sand from exposure to toxic and hazardous materials.

POLICY SEVEN

MINIMIZE ENVIRONMENTAL DEGRADATION AND NEGATIVE IMPACTS ON PUBLIC HEALTH FROM SOLID WASTE, TOXIC POLLUTANTS, HAZARDOUS MATERIALS, AND INDUSTRIAL MATERIALS THAT MAY POSE RISKS TO THE ENVIRONMENT AND PUBLIC HEALTH AND SAFETY.

Introduction

The disposal of solid waste (residential, industrial and commercial waste, demolition and construction debris, and sludges from water pollution control or resource recovery facilities) can affect the use and quality of the city's waterways and coastal lands. Among the concerns associated with the disposal and treatment of solid wastes and hazardous materials are the environmental damage caused by illegal dumping and the potential for contamination of water resources and coastal habitat areas, filling of wetlands and littoral areas, atmospheric loading, and degradation of scenic resources in the Coastal Zone. Hazardous materials and toxic substances can contaminate soils and pollute waterways, if not stored, transported, and used properly. This contamination can lead to environmental degradation and create public safety risks. The open storage of some bulk or aggregate materials can also pose risks to the environment and the public health and safety if they are released into the surrounding area in the event of a coastal storm or flooding. The proper handling, storage, disposal and transport of these materials, and impacts on public health, are important in all areas of the Coastal Zone.

The storage, handling, transfer and disposal of solid wastes, hazardous materials and toxic substances must comply with all applicable local, state and federal regulatory and permitting requirements. Review of projects for consistency with WRP policies serves to ensure that all requirements stemming from the variety of applicable environmental regulations which are overseen and implemented by various agencies at all levels of government are identified and adhered to and that the project is undertaken in a systematic and coordinated fashion.

Related Regulations

Projects involving the handling, management, transportation, or discharge of solid wastes and hazardous materials need to comply with the applicable state and local laws or their successors unless preempted by federal law. Solid wastes are those materials defined under ECL 27-0701 and 6 NYCRR Part 360-1.2. Hazardous wastes are those materials defined under ECL 27 -0901 and 6 NYCRR Part 371. Substances hazardous to the environment are defined under ECL 37-0103. Toxic pollutants are defined under ECL 17-0105. Radioactive materials are defined under 6 NYCRR Part 380. Pesticides are those substances defined under ECL 330101 and 6 NYCRR Part 325.1.

Under ECL 17-10, "Control of the Bulk Storage of Petroleum," underground and aboveground petroleum storage tanks must be registered with NYS DEC and meet handling and storage requirements established by DEC (see 6NYCRR 612-614).

The regulations set forth in 6NYCRR 612-614 also apply to major oil storage facilities. Under Article 12 of the Navigation Law, "Oil Spill Prevention, Control and Compensation Act," major oil storage facilities must also obtain an operating license from NYS DEC and implement a spill prevention plan (see 6NYCRR Parts 610 and 611).

Under ECL 37 and ECL 40, NYS DEC regulates the sale, storage, and handling of all substances covered by the Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and Federal Toxic Substances Control Act (FTSCA). The regulations are implemented through the Chemical Bulk Storage Regulations (see 6NYCRR Parts 595-599).

The discharge of wastewater into surface or groundwater is regulated by the NYS Dept. of Environmental Conservation under the State Pollutant Discharge Elimination System (SPDES). As part of the SPDES permitting process, a Stormwater Pollution Prevention Plan (SWPPP) must be developed for construction areas greater than one acre in separate sewer or direct discharge areas, which are common along the waterfront. The SWPPP must outline and describe stormwater controls for during and post-construction.

Pursuant to the NYC Community Right to Know Law, facilities where extremely hazardous materials or regulated toxic substances are present at or above federally determined levels are required to prepare and submit a Risk Management Plan to the NYC Department of Environmental Protection.

Under ECL 27-14, NYS DEC oversees the State's Brownfield Cleanup Program. The requirements for soil cleanup objectives are contained 6NYCRR Part 375-6. Additional Brownfield assistance programs include the NYS Department of State's Brownfield Opportunity Areas Program and the NYC Mayor's Office of Environmental Remediation's NYC Brownfield Cleanup Program.

7.1 Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.

A. Prevent release of toxic pollutants, radioactive materials, or substances hazardous to the environment that would have a deleterious effect on fish and wildlife and human resources. Limit discharges of persistent bioaccumulating and toxic substances. Minimize resuspension of toxic pollutants and hazardous substances and wastes and reentry of bioaccumulative substances into the food chain for existing environmental sources. Limit use of pesticides, herbicides, insecticides, and fertilizers and to prevent direct or indirect entry into waterways.

B. Remediate inactive hazardous waste disposal sites and brownfields to ensure that the public health and the waters, wetlands, and habitats are protected. Utilize best practices

during the remediation process to ensure safe containment of contaminants in the event of a coastal storm.

C. To the extent required by NYC Community Right to Know Law and local and state water quality improvement programs, integrate consideration of pollution prevention, good housekeeping and control of hazardous wastes, toxic pollutants, and substances hazardous to the environment into the planning and design of any facility using such materials.

D. Use accepted best design and management practices, including industrial pollution prevention, for the siting of hazardous materials, toxic pollutants, and other materials that may pose risks to the environment and public health and safety. Use best site design practices to prevent the runoff of pollutants and potentially contaminated sediment into waterways. The NYS Dept. of Environmental Conservation's New York State Stormwater Management Design Manual should be used as a reference.

E. Provide adequate wastewater collection facilities to the extent practicable to prevent direct discharge of treated sewage by vessels into the waterways.

F. Pursuant to WRP Policy 6.2, incorporate consideration of climate change and sea level rise into the planning and design of projects which involve the siting of materials storage which may pose risks to public health and the environment. Projects should consider potential risks to features specific to each project, including but not limited to temporary and long-term waste storage areas, fuel storage tanks, and hazardous material storage.

7.2 Prevent and remediate discharge of petroleum products.

A. Minimize negative impacts from potential oil spills by the appropriate siting of petroleum off-loading facilities and use of best practices.

B. Follow best practices for the prevention and control of petroleum discharges from any major petroleum-related facility. Clean up and remove any petroleum discharge in accordance with the guidelines contained in the *New York State Water Quality Accident Contingency Plan and Handbook*.

C. Follow approved methods for handling and storage and use approved design and maintenance principles for storage facilities to prevent discharges of petroleum products.

7.3 Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

A. Use routes and methods for transporting solid waste and hazardous materials that protect the coastal environment and the safety and general welfare of the public.

B. Site and design solid and hazardous waste facilities so that they will not adversely affect protected natural areas, including Significant Coastal Fish and Wildlife Habitats, habitats and wetlands critical to vulnerable species, rare ecological communities, surface waters, and aquifer recharge areas.

C. Give priority to waterborne transport of waste materials and substances when siting solid and hazardous waste facilities within the coastal area where practical and economically feasible.

POLICY EIGHT

PROVIDE PUBLIC ACCESS TO, FROM, AND ALONG NEW YORK CITY'S COASTAL WATERS.

Introduction

The intent of Policy 8 is to improve the connectivity and continuity of public access along the waterfront. This entails providing both physical and visual public access in a manner that balances the interests of public and private waterfront use. Public open spaces along the waterfront can transform neighborhoods, turning previously inaccessible lands into vibrant community gathering areas and greenways that provide recreational opportunities, promote non-vehicular modes of transportation, and foster economic growth. The public access provisions of the city's waterfront zoning regulations, adopted in 1993 and updated in 2009, implement this policy for actions subject to zoning. These zoning regulations establish public access requirements for most new residential and commercial development including standards for the size and configuration of shorefront public open spaces, requirements for visual and physical connections to the upland, and design guidelines for the treatment of public spaces. The 2009 update improved the design standards for waterfront public access areas by allowing for greater design flexibility and variability.

Pursuant to the Zoning Resolution, access is not required where it would be either incompatible with the principal use of the site or inappropriate for the scale of development. The regulations provide for the adoption of Waterfront Access Plans to tailor the requirements to local conditions. Compliance with the requirements of the Special Regulations Applying in the Waterfront Areas of the Zoning Resolution (Article 6, Chapter 2) will generally satisfy this policy. If the project is not subject to zoning, the principles elaborated in Policy 8.6 should be used as guidance for the design of public access.

Although waterfront zoning regulations do not require public access in connection with industrial development, there are often appropriate opportunities for physical or visual access along the working waterfront. Where there is no identified risk to public health and safety or to industrial operations, this policy would encourage public parks, public piers, and/or greenway routes along the industrial waterfront as well as viewing areas, street end access points, visitor centers, and site tour programming. Projects on public land or using public funds should provide some form of public access, unless there is no safe or practicable way of doing so.

This policy also presents standards for public lands, public facilities contiguous to the shoreline, and underwater lands (public trust lands). These standards are intended to preserve existing access to the shoreline provided by facilities such as public parks, beaches, marinas, piers, streets, highways; as well as existing easements on privately owned land and to encourage public access improvements as a component of public projects.

8.1 Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.

A. Protect, maintain, and enhance infrastructure, including roadways, greenways, piers, and shoreline protection structures, which support public access and recreation facilities.

B. Maintain in good repair existing public access areas to ensure public safety and enhance enjoyment.

C. Provide wayfinding from upland areas to waterfront public spaces and from one waterfront public space to another.

8.2 Incorporate public access into new public and private development where compatible with proposed land use and coastal location.

A. Encourage the development and maintenance of high quality public spaces in appropriate locations, particularly those that would facilitate the connection of existing waterfront public access spaces and allow continuous access along the shore.

B. All development on the shoreline, including industrial development, that receives public financial assistance, or is on publicly owned land, should, to the extent practicable, provide some form of public access, unless one of the following criteria is demonstrated:
   - Public access would be inconsistent with the functional and operational needs of the proposed facility and would create risk to public safety and/or security. For instance, public access would not be consistent within Federal Port security zones.
   - Public areas would not be safely accessible from upland areas and other public access areas.

C. In SNWAs, the ESMIA, and Recognized Ecological Complexes, provide public access, interpretive signage, and recreation compatible with the preservation of natural resources. To minimize negative environmental impacts and avoid habitat impairment, use methods and structures including but not limited to: boardwalks, catwalks, nature trails with permeable surfaces, and barriers to vehicles such as bollards and berms. Protection of the natural resource may take priority over public access, if both cannot be accommodated on the project site. Where physical access cannot be accommodated, provide visual access to coastal resources.

D. When public access cannot be included as a component of a public project, site and design the project in a manner that does not preclude the future development of public access.

E. Encourage the development of public access within private development in industrially zoned areas where there is no identified risk to public health and safety or to industrial operations. In areas where industrial land limits upland communities' access to the water, limited public access points and street-end parks located within or adjacent to the seaward termination of public streets may be compatible with the nearby industrial uses.

Where waterfront public access would endanger public health or safety, alternative strategies to provide public access should be encouraged including access points or public overlooks that visually connect people to maritime activity. Additional alternative forms of public access that can be explored include visitor centers, programming and guided tours or temporary access.

F. Encourage use of waterfront sites for temporary public events and activities when compatible and appropriate.

8.3 Provide visual access to the waterfront where physically practical.

A. Preserve existing visual access in the development of waterfront public lands and facilities. Minimize reduction of existing visual access caused by the scale, design, and location of public projects in areas such as streets, parks, bridges, and highways. Preserve visual corridors provided or defined by mapped streets (open or improved) that terminate at the shoreline or within the waterfront block.
B. For sites where physical public access is unfeasible, visual access should be provided to the extent practicable.

8.4 Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.

A. When reviewing actions relating to the use of publicly owned land or the acquisition of waterfront property for the provision of public access, give priority to locations identified in published plans including, but not limited to State Open Space Acquisition Plan Priority Sites; New York City Greenway Priority Routes; and adopted Waterfront Access Plans; or a location which meets one or more of the following criteria:

- Sites with potential for waterfront-enhancing, water-related, or water- dependent uses or recreation (passive or active, along the shore, on piers, or in the water);
- Sites within proposed greenway and blueway (boating) routes that would link public waterfront access points, the foreshore, nearshore surface waters, and public parks and open spaces;
- Sites within a waterfront area with less than 2.5 acres of open space per 1000 residents (the areas identified in the CEQR Technical manual as underserved should be the basis of this determination), or where there is a gap in public access along the shoreline of 0.25 miles or more;
- Sites that would enhance natural resources and habitats;
- Sites that would improve access to public lands, buffer public lands from incompatible uses, or consolidate or connect existing public lands;
- Sites listed as local Historic Landmarks or listed on the State and National Register of Historic Places;
- Sites with scenic resource value as identified in local special district regulations

8.5 Preserve the public interest in and use of lands and waters held in public trust by the State and City.

A. Limit grants, easements, permits, or lesser interest in lands underwater to those instances where there would be no overall adverse effect on the public interest in public trust lands.

B. Limit the transfer of interest in public trust lands to the minimum necessary.

C. Require documentation of ownership, riparian interest, or other legal right where such interests or rights are not readily apparent prior to approving private use of public trust lands under water.

D. Limit grants in fee of underwater lands to exceptional circumstances.

E. Retain a public interest in the transfer of interest in underwater lands which will be adequate to preserve appropriate public access, recreational opportunities, and other public trust purposes.

F. Avoid substantial loss of public interest in public trust lands by the cumulative impact of individual conveyances.

G. Re-establish public trust interests where appropriate in existing grants not used in accordance with the terms of the grant or the public trust doctrine.

H. Ensure that the exercise of riparian interests remains protective of and does not obstruct or impede the public's rights to access public trust resources. Where a substantial obstruction or impediment to public trust resources cannot be avoided, adequate mitigation should be provided to compensate for the loss of access.

8.6 Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.

The following principles should be applied as appropriate and to the extent practicable.

A. Access Principles:
- Provide opportunities for the public to get to the water's edge.
- Make open spaces and upland connections inviting; Entrances to open spaces in particular should clearly convey that the public is welcome.
- Consider varying the relationship between walkways and the waterfront edge, especially in areas where plantings can be installed next to the water.
- Connect shoreline path systems.
- Provide access to upland path systems and amenities.

- Use landscape design to improve the relationship between elevated ground floors and the grade of waterfront public spaces in flood zones, through features such as terracing, tiered pathways and berms.

B. Amenities Principles:
    - Provide a sufficient quantity and variety of seating that complies with ADA regulations. Offer amenities and activities appropriate to the program, site, and context.
    - Install lighting that is appropriate to the program, site, and context. Lighting installed should be adequate for public safety.
    - Employ fences and sea rails that are as transparent as possible; design seating so top rails are not at the eye level of those seated.
    - Provide views of the water from lawn areas, unobstructed by benches or trees, to the greatest extent practicable.
    - Consider a varied landscape design vocabulary, including edge treatments, as appropriate to the program, site, and context.
    - Incorporate or reference significant historic features or natural conditions associated with the site, where appropriate.
    - Comply with City policies that discourage the use of tropical hard woods; encourage the use of sustainable and renewable materials.
    - Provide an appropriate balance of both sunny and shaded spaces.
C. Environment Principles:
    - Promote the greening of the waterfront with a variety of plant material for aesthetic and ecological benefit.
    - Use water- and salt-tolerant plantings in areas subject to flooding and salt spray.
    - Maximize water-absorption functions of planted areas.
    - Preserve and enhance natural shoreline edges.
    - Design shoreline edges that foster a rich marine habitat.
    - Design sites that anticipate the effects of climate change, such as sea level rise, storm surges, wave action, erosion, and daily tidal flooding.
D. Water Access Principles:
    - Consider opportunities for connections between land and water, including opportunities for water recreation.
    - Consider water-dependent and water-enhancing uses at the water's edge such as fishing sites, boat launches, and get downs to the water where appropriate.
    - In the design of the spaces, encourage the experience of the land from the water and the water from the land. Treat the edge as a zone of exchange, not separation.
    - Consider dock construction and tie-up space for recreational, educational, commercial or law enforcement and emergency response vessels—as appropriate to the context—on piers, platforms, and bulkheaded shorelines provided it does not compromise security or public safety. Provide ladders, life safety apparatus such as floating devices, or other means of safely accessing the water or watercraft on such sites.
    - Consider opportunities to incorporate upland storage for recreational boats.

POLICY NINE

PROTECT SCENIC RESOURCES THAT CONTRIBUTE TO THE VISUAL QUALITY OF THE NEW YORK CITY COASTAL AREA.

Introduction

The intent of Policy 9 is to prevent the impairment of natural and manmade scenic resources in the coastal area. High-quality coastal landscapes may consist of waterbodies, landforms, vegetation and components of the built environment such as buildings, highways, bridges, piers, working waterfront structures, port infrastructure, and other structures representative of a highly urban, nationally significant, and ecologically diverse metropolitan area. In New York City, visual quality and scenic resources are recognized and protected through historic preservation, natural resource protection, parks and open space planning and acquisition, zoning special districts, waterfront zoning (Article 6, Chapter 2 of the Zoning Resolution) controls on over-water development, areas for public viewing, and urban design standards that shape new development.

9.1 Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.

A. Ensure that new buildings and other structures are compatible with and add interest to existing scenic elements, such as landmarks, maritime industry, recreational boating facilities, natural features, topography, landforms, and the botanic environment. Among the measures that may be considered are grouping or orienting structures to preserve open space and maximize views to and from the coast and incorporating sound existing structures into development where harmonious with their surroundings.

B. Where feasible and practicable, provide views of visually interesting elements of water-dependent uses.

C. New development should be compatible with the scenic elements defining the character of the area. The New York City Zoning Resolution provides standards for waterfront landscaping.

D. Preserve existing vegetation or establish new vegetation where necessary to enhance scenic quality.

E. Minimize introduction of uses that would be discordant with existing scenic elements, and screen unattractive aspects of uses that detract from the visual quality of nearby public parks and waterfront open spaces.

F. Provide public viewing at and interpretive signage of industrial uses where compatible and appropriate.

9.2 Protect and enhance scenic values associated with natural resources.

A. In the SNWAs and Recognized Ecological Complexes, avoid structures or activities that interrupt landscapes, including introduction of discordant elements such as intrusive artificial light sources, fragmentation of and structural intrusion into open space areas, and changes to the continuity and configuration of natural shorelines and associated vegetation.

B. In SNWAs and Recognized Ecological Complexes, design new development to complement the scenic character of natural resources. Minimize and screen discordant elements which cannot be inconspicuously located.

C. Provide interpretive signage of ecologically significant resources and sites.

D. Off-shore activities that would significantly obstruct or interrupt views of open waters from public vantage points on land should be avoided, while taking into consideration the potential benefits of the project. When avoidance is not possible, minimize obstruction or interruption to the extent practicable. Key considerations in the assessment of consistency with this policy may include whether the obstruction would be permanent, seasonal, or temporary; how many viewers would be affected; whether the view is unique or whether similar views exist at other locations.

POLICY TEN

PROTECT, PRESERVE, AND ENHANCE RESOURCES SIGNIFICANT TO THE HISTORICAL, ARCHAEOLOGICAL, ARCHITECTURAL, AND CULTURAL LEGACY OF THE NEW YORK CITY COASTAL AREA.

Introduction

Archaeological sites and historic structures are tangible links to the past generations, events and cultures associated with New York City's coastal area. The intent of this policy is to protect, preserve, and revitalize those historic, archaeological, and cultural resources that have a coastal relationship or significance. Architectural resources generally include historically, culturally, or architecturally significant buildings, structures, objects, sites, and districts. They also may include infrastructure such as bridges, canals, piers, wharves, and railroad transfer bridges that may be wholly or partially visible above ground. Archaeological resources are physical remains, usually subsurface, of the prehistoric, Native American, and historic periods—such as burials, foundations, artifacts, wells, and privies. As a general rule, archaeological resources do not include 20th- and 21st-century artifacts.

The New York City Landmarks Preservation Commission (LPC) is charged with identifying and designating landmarks and historic districts and regulating any changes to designated structures. There are nearly 500 New York City Landmarks and about 30 historic districts within the city's Coastal Zone. The state and national historic registers are the official lists of buildings, structures, districts, objects, and sites significant in the history, architecture, archeology, engineering, and culture of New York and the nation. Registered properties and properties determined eligible for the registers receive a measure of protection from the effects of projects that are sponsored, licensed, or assisted by the state or federal governments through a notice, review, and consultation process. Listing also makes properties eligible for federal and state tax credits for historic rehabilitation, but it does not place any restrictions on private owners of properties.

Related Regulations

All projects involving historic and archaeological resources need to comply with national, state, and local laws and regulations regarding designated historical resources, specifically New York City Administrative Code §25-303, as well as those pertaining to the discovery, investigation, and recovery of archaeological resources.

10.1 Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.

A. Protect historic resources to the extent practicable, including those structures, landscapes, districts, areas, sites, vessels, or underwater structures that are listed or designated as follows:

- Any historic resource in a federal, state, or city park established, solely or in part, to protect and preserve the resource;
- Any resource listed on, or formally determined eligible for inclusion on, the National and/or State Register of Historic Places, or contained within a district listed on, or formally determined eligible for listing on, the State and/or National Register of Historic Places;
- Any resource designated as a New York City Landmark, Interior Landmark, Scenic Landmark or properties within a designated New York City Historic District;
- Resources calendared for consideration as one of the above by Landmarks Preservation Commission;
- National Historic Landmarks; and
- Resources not identified by one of the programs listed above, but that meet their eligibility requirements (for eligibility requirements see Chapter 9 of the CEQR technical manual)

B. Protect resources, including those not listed or identified in 10.1 A, which are related to the historical use and development of the waterfront, including ships, shipwrecks, lighthouses and other aids to maritime navigation, points of entry and embarkation, and structures related to the defense of the Port of New York.

C. Foster efficient and compatible adaptive re-use of historic resources to maximize retention of their historic character and minimize their alteration.

D. Promote public awareness of New York's waterfront through educational and cultural facilities, events, and programming.

E. Facilitate public programming of historic resources through such measures as provision of tie-up space for historic vessels.

10.2 Protect and preserve archaeological resources and artifacts.

A. Minimize potential adverse impacts to significant archaeological resources by redesigning the project, reducing the direct impacts on the resource, or recovering data prior to construction.

B. Conduct a cultural resource investigation when an action is proposed on an archaeological site, fossil bed, or in an area identified as potentially sensitive for archaeological resources.