

# **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 19<sup>th</sup> and much of the 20<sup>th</sup> 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.