



# Green Infrastructure & Stormwater Management CASE STUDY

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## Harlem River Park – Designing the Edge

**Location:** Between 138th and 145th St., Manhattan shore of Harlem River, NY, NY

**Client:** NYC Parks & Recreation and NYC Economic Development Corp.

**Design Firm(s):** Ricardo Hinkle and Marcha Johnson, NYC Parks; Parsons Brinkerhoff for NYC EDC- Greg Hoer

**Landscape architect/Project contact:** Marcha Johnson, PhD, ASLA

**Email:** [marcha.johnson@parks.nyc.gov](mailto:marcha.johnson@parks.nyc.gov)

**ASLA Chapter:** New York

### Project Specifications

**Project Description:** This project replaced about 1,000 linear feet of corroded steel sheeting used to channelize the Harlem River in the past, with a series of different porous edges having high habitat value. The edges include green walls, terraced gabions incorporating filter-feeding shellfish, tidal pools, salt marsh fringe and native coastal plantings. Construction was completed in 2009.

**Project Type:**

Open space - park

A retrofit of an existing property

**Design features:** Porous seawalls with flood storage capacity in the adjacent green space.

**This project was designed to meet the following specific requirements or mandates:**

Designed as a demonstration prototype for flood-absorption, small boat access and estuarine habitat.

**Impervious area managed:** 1 acre to 5 acres

**Amount of existing green space/open space conserved or preserved for managing stormwater on site:** 5,000 sq/ft to 1 acre - filled shoreline was cut back to provide more floodplain functions.

**The regulatory environment and regulator was** supportive of the project.

**Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements?** Yes, maximizing green space and accomodating the new bike path.

## Cost & Jobs Analysis

**Estimated Cost of Stormwater Project:** >\$5,000,000 (Public funding: Federal, state, local.)

**Was a green vs. grey cost analysis performed?** No

**Cost impact of conserving green/open space to the overall costs of the site**

**design/development project:** Improving the porosity of the floodplain with greenwalls and gabions was roughly equivalent to replacing the steel sheetwalls in-kind.

**Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?** Slightly increased. Compared with a similar project replacing the old sea wall with new steel sheeting, cost were slightly higher; however, the site construction constraints (requiring construction from the water side on barges) added costs unrelated to the use of porous materials.

**Number of jobs created:** Temporarily, about 12 contractors were employed, three landscape architects, 12 administrators and construction supervisors.

**Job hours devoted to project:**

Planning and Design: 4,000

Construction: Not available

Annual Maintenance: Not available

## Performance Measures

**Stormwater reduction performance analysis:**

This project was not intended to reduce runoff but to absorb runoff and high water in the river.

**Community & economic benefits that have resulted from the project:** Access to improved, safer recreational space, connections to the river environment for interpretation and education, improved estuarine habitat, and cleaner water.

## Project Recognition

Harlem River Park, NY Construction Magazine Best of 2010 Award, McGraw Hill, 2010.