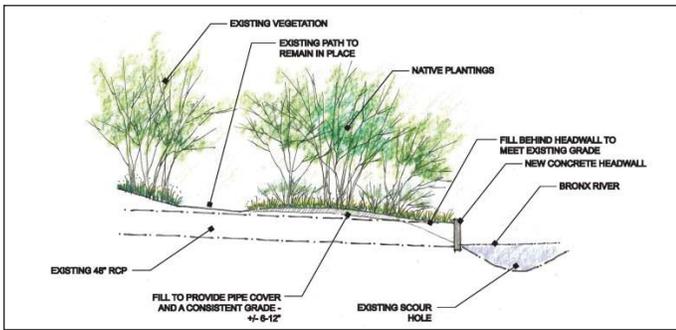


# Muskrat Cove Pipe Remediation and Streambank Stabilization

Yonkers, New York



*A cost-saving design repaired the headwall, stabilized streambanks, provided public access and established native, riparian vegetation.*

Biohabitats partnered with the Bronx River Alliance to assess potential design solutions for an eroding shoreline located on the Bronx River on the border between Yonkers and the Bronx. Stormwater flows caused the outfall headwall to fall into disrepair,

created a scour hole in the stream, and eroded the opposite shoreline.

Biohabitats approached the project by first developing a two-dimensional hydrodynamic model to gain an understanding of existing

flow patterns and their effect on stream and bank stability. The model was then used to understand how flow patterns and stability would be affected by proposed design solutions. Biohabitats developed a cost-saving design that removed the headwall, stabilized the streambanks, created a rain garden to retain some stormwater flows, added scour protection, incorporated public access to the site, and established native vegetation in the riparian zone.

To proceed with final design and construction, Biohabitats successfully worked with the Bronx River Alliance to secure a grant from the National Fish and Wildlife Federation's Bronx River Watershed Initiative, which

provides funding for stormwater retrofit projects to address root causes of pollution from stormwater outfalls, with the goal of improving water quality and river ecology along the Bronx River.

After completing the final designs, Biohabitats coordinated with federal, state, and local agencies to acquire the necessary permits for the project. The project was constructed in the summer of 2013 and planted in the fall of 2013. Educational signage, designed by Biohabitats, was also developed to enhance visitors' understanding of the site and the adjacent rain garden.

## SERVICES

Inventory & Assessment  
Design

*conservation planning*  
*ecological restoration*  
*regenerative design*



800.220.0919  
www.biohabitats.com

