CENTRAL PARK CONSERVANCY

NORTH END RECIRCULATION PROJECT
PROJECT SUMMARY
June 2024

Background/Historic Context

The North End Recirculation project is a continuation of the work the Central Park Conservancy (CPC) started as part of the Harlem Meer Center, currently in construction, and highlights the Conservancy's commitment to increase Central Park's sustainability, resiliency and improve the water quality of the north end water bodies.

The three water bodies north of the Reservoir in Central Park – the 100th Street Pool, the Loch, and the Harlem Meer – were constructed between 1862 and 1865 by introducing dams and weirs along an existing stream course (Montayne's Rivulet), excavating to create distinct pools of water, and augmenting the stream flow with city water via the same Croton Aqueduct system that supplies the Reservoir. The Pool, Loch and Meer form an interconnected water system whereby water flows from the Pool into the Loch and then to the Harlem Meer. Though it receives stormwater through overland flow and piping, the system has no designed stormwater detention capacity, and the outflow of the Meer connects directly to the combined sewer system at Fifth Avenue.

Because of the dependence of the Pool-Loch-Meer system on potable city water, the possibility of recirculation was considered when the water bodies were constructed as part of the original construction of the park (documented in early annual reports of the Central Park Board of Commissioners). The Harlem Meer outflow structure was designed with multiple chambers to facilitate a future recirculation system that was never fully realized. The 1865 annual report mentions a potential "engine – one or more – to elevate, economize and re-distribute the water." Though the multi-chamber Meer outflow structure was constructed, no recirculation infrastructure was ever installed, and the system has remained substantially unchanged since the 19th century.

The idea of a recirculation system surfaced again in 2000 when NYC's Department of Environmental Protection (NYC DEP) commissioned a Water Quality Management Planning report that analyzed various recirculation schemes for Central Park, including recirculating water within individual water bodies and creating parkwide recirculation by utilizing the Reservoir for storage. The goal of this planning effort was to achieve combined sewer overflow (CSO) reductions by reducing discharges from Central Park into the combined sewer system, with potable water use reduction and water quality improvement as supplemental benefits. The project did not advance to implementation as it was determined not to be feasible due to cost and impassable physical barriers within the park.

In 2016, the recirculation concept reemerged when NYC DEP approached CPC about decreasing the use of potable city water in the Pool, Loch, and Meer system to support DEP's overall goals of reducing citywide water use. As an outcome of this dialogue, CPC engaged a consultant engineer to explore potential options to reduce potable water use (and, if possible, stormwater discharges to combined sewer) through a recirculation system. Once this planning-level study confirmed the conceptual feasibility of achieving these objectives with a recirculation system, CPC developed the preferred scheme further. Since 2019, we have been coordinating with both DEP and NYC Parks to move the project forward.

Existing Conditions
Starting soon after its inception in 1980, the Central Park Conservancy (CPC) has undertaken numerous major restoration projects in the north end of the park, including several with direct impacts on water quality within the Pool-Loch-Meer watershed. In the late 1980s, the Harlem Meer was reconstructed. Hard edges along shorelines were naturalized with riparian and aquatic plantings, a vegetated island was added, large volumes of sediment were removed, and the Dana Center visitor and education center was constructed.

In the late 1990s, the North Meadow ballfields and landscape were restored, with a focus on improving stormwater management to reduce peak storm discharges to the Loch waterbody. The restoration of the Pool was completed in the early 2000s, with significant sediment removal and stabilization of the waterbody shoreline and surrounding upland areas to prevent future sedimentation. The Loch and surrounding Ravine landscape were restored between 2014 and 2017. During this project, the Loch was selectively widened and deepened to restore open water in what had become a heavily silted and constricted watercourse. Surrounding riparian areas and uplands were stabilized and heavily revegetated with native species to end the cycle of erosion and siltation.

CPC is currently replacing Lasker Pool and Rink with the new Harlem Meer Center, which will include further enhancements to the Meer and will reintroduce the watercourse linking the Loch and Meer (the waterbodies have been connected by an underground culvert since the construction of the Lasker facility in the 1960s).

Project Goals
- Conserve potable water and reduce Central Park's reliance on city water supply to feed waterbodies
- Reduce the Park's input to combined sewer which contribute to flooding and combined sewer overflow
- Improve water quality in the Pool, Loch and Harlem Meer and reduce harmful algal blooms
- Enhance habitat in the Pool and Harlem Meer by restoring water depth lost to sedimentation and supplement riparian and emergent aquatic plantings
- Stabilize shoreline edges to prevent erosion

Scope of Work
Harlem Meer

- Modify existing outflow structure and install automated outflow control system
- Install new pumping and filtration system
- Remove sediments from the southeast cover and stabilize with edge treatments and plantings

100th Street Pool

- Install filtration and makeup water systems
- Remove sediments, stabilize the shoreline with edge treatments and plantings

Piping System

- Install pressurized piping system to connect the Harlem Meer outflow with the Pool inflow