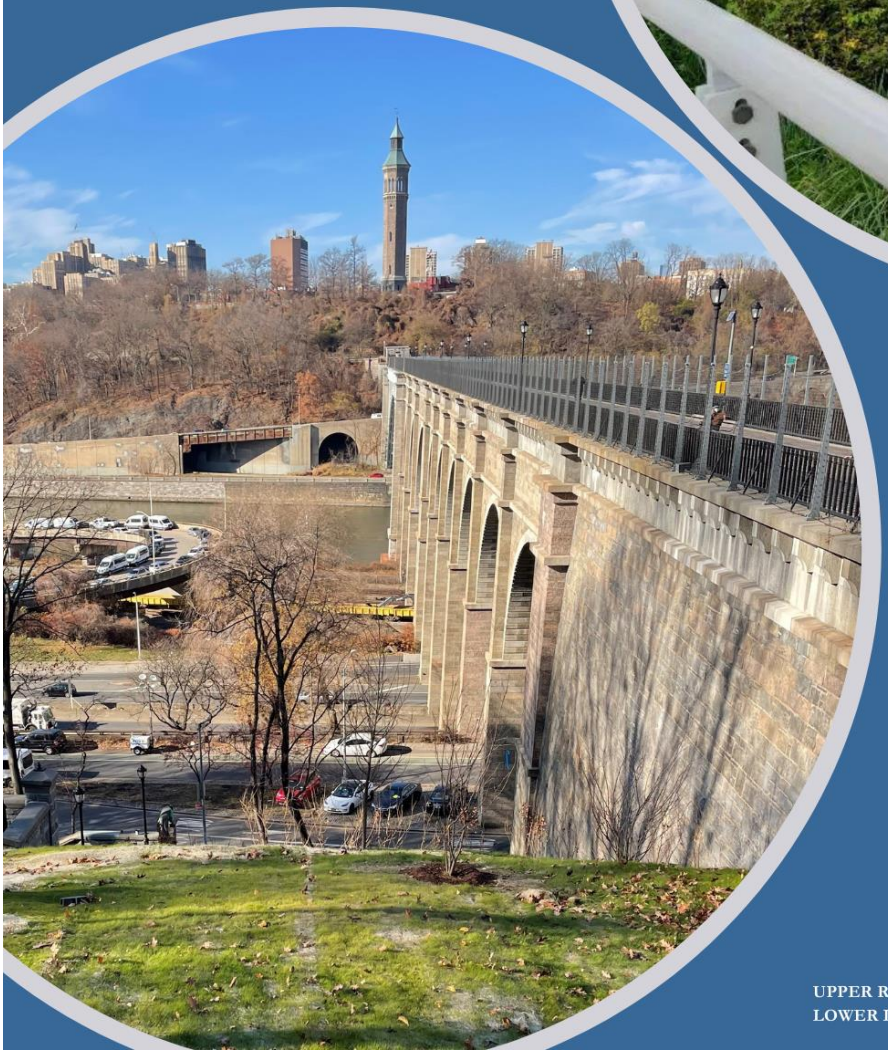
BRONX & HARLEM RIVER WATERSHEDS

URBAN WATERS FEDERAL PARTNERSHIP

2023-2024 WORK PLAN



UPPER RIGHT: Starlight Park, Bronx River - Christina Carrero
LOWER LEFT: High Bridge, Harlem River - Karen Argenti

Bronx & Harlem River Watersheds
Urban Waters Federal Partnership

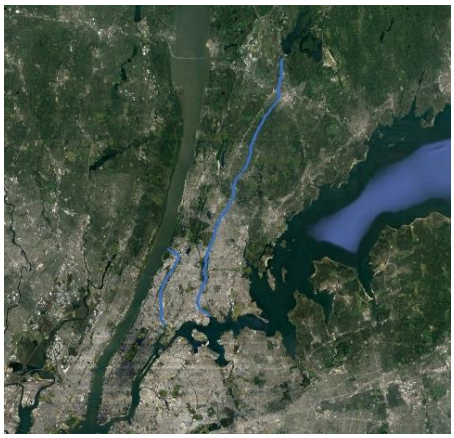
2023-2024 Work Plan

Contents

Overview

The Urban Waters Federal Partnership (UWFP) is a federally-led initiative focused on reconnecting overburdened and economically distressed urban communities with their waterways by improving coordination among federal agencies and collaborating with community-led revitalization efforts. The Bronx and Harlem River Watersheds location in New York, NY was one of the original seven pilot UWFP locations established in 2011 – today there are 21 locations around the US.

Led by the United States Department of the Interior, the Bronx and Harlem River UWFP works to help overburdened and underserved Bronx communities reconnect to their waterways, reduce the negative impacts of urbanization on both water quality and human health, and restore impacted riverfronts and watersheds while pursuing environmental justice. An Urban Waters Ambassador works to identify and advance priority projects and coordinates agency and community involvement. The Bronx and Harlem River UWFP's Ambassador position is made possible by the sustained support of the U.S. Environmental Protection Agency (EPA). EPA funding is administered by the New York – New Jersey Harbor & Estuary Program (HEP) at the Hudson River Foundation (HRF); HEP also hosts the Ambassador position.



Aerial view of the Bronx and Harlem Rivers in New York City, New York; the Harlem River separates Manhattan from the Bronx, and the Bronx River originates in Westchester County before flowing through the heart of the Bronx.

This workplan has been developed by the Bronx and Harlem Rivers UWFP to define goals, identify key partners and responsibilities, and summarize priority projects for calendar years 2023-2024. It is also the basis for allocating the Ambassador's time and effort as well as other contributed resources. This bi-annual workplan will be updated in January 2025 and/or as funding or new collaborative opportunities adjust Partnership priorities.

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Background

The Bronx and Harlem Rivers are part of the larger Hudson River/NY-NJ Harbor Estuary and Long Island Sound systems, and as such, hold enormous potential to provide a variety of benefits to millions of people in the region.

The Harlem River is a nine-mile long waterbody that separates Manhattan from the Bronx. The Harlem is actually a tidal strait, not a true river, which connects the Hudson River in the north and another tidal strait, the East River, to the south. Once a complex system of tributaries, wetlands, and meandering shorelines, today the River has been channelized, hardened, and heavily impacted by development and industry over the last 200+ years.

The Bronx River is 24 miles long and empties into the East River/Long Island Sound. Its watershed spans both New York City (NYC) and 13 Westchester County municipalities and is 38 square miles in size. The Bronx River is the only freshwater river remaining in NYC, although it is tidal for a portion of its southernmost length below the dam at Starlight Park (approximately E 172nd Street). Like the Harlem River, the Bronx River has been negatively impacted by urbanization.

Bronx and Harlem River communities are home to a disproportionate amount of NYC's solid waste transfer, wastewater treatment, and electrical generation facilities, have among the highest obesity, diabetes, and asthma rates in NYC, and host the world's largest wholesale food distribution center, which generates upwards of 20,000 truck trips through residential neighborhoods every day. New York's 15th Congressional District, the poorest in the nation, spans the southern portion of these two watersheds.

The Bronx is home to the largest (Pelham Bay) and third largest (Van Cortlandt) parks in all of New York City. However, access to the Harlem River in particular (on both the Manhattan and Bronx sides) is severely lacking. A 2016 study by the NY-NJ Harbor & Estuary Program identified the Bronx as the highest need area in all of New York City in terms of equitable public access to the waterfront.

Partners

This UWFP location is led by Department of Interior (DOI) & U.S. Geological Survey (USGS). Key partners are listed alphabetically below.

Federal Agency Partners

Federal Emergency Management Agency (FEMA)
National Oceanic & Atmospheric Administration (NOAA)
National Park Service (NPS)
U.S. Army Corps of Engineers (USACE)
U.S. Department of Housing and Urban Development (HUD)
U.S. Department of Interior (DOI)
U.S. Department of Transportation (DOT)
U.S. Environmental Protection Agency (EPA)
U.S. Fish & Wildlife Service (USFWS)
U.S. Forest Service (USFS)
U.S. Geological Survey (USGS)

State Agency Partners

New York State Office of Parks, Recreation, & Historic Preservation (NYS Parks)
New York State Department of Environmental Conservation (NYS DEC)

Elected Officials and Local Government Partners

Congressman Adriano Espaillat's Office
Congressman Ritchie Torres's Office
NYC Economic Development Corporation (NYC EDC)
NYC Department of Environmental Protection (NYC DEP)
NYC Department of Transportation (NYC DOT)
NYC Department of Parks & Recreation (NYC Parks)
NYC Soil & Water Conservation District (NYC SWCD)
Office of the Bronx Borough President
Westchester County Bronx River Advisory Board (BRAB)
Westchester County Department of Planning

Non-Governmental & Community Organizations

Billion Oyster Project (BOP)
Bronx Council for Environmental Quality (BCEQ)
Bronx is Blooming
Bronx River Alliance (BxRA)
Harlem River Working Group
Hudson River Foundation (HRF)
Loving the Bronx
Natural Areas Conservancy (NAC)
NY/NJ Harbor & Estuary Program (HEP)
New York Restoration Project (NYRP)
Randall's Island Park Alliance (RIPA)
Rocking the Boat
Riverkeeper
South Bronx Unite
Stormwater Infrastructure Matters (SWIM) Coalition
Transportation Alternatives
Van Cortlandt Park Alliance (VCPA)
Waterfront Alliance

Goals

The Bronx and Harlem River Watersheds UWFP works to protect, restore, and revitalize the Bronx and Harlem Rivers in the New York City, New York through improved coordination among federal agencies and collaboration with community-led revitalization efforts. The partnership will use the mission, vision, and principles of the UWFP to:

- Promote clean waterways through the use of natural and nature-based features and by quantifying and reducing sources of pollution to the Bronx and Harlem Rivers;
- Reconnect communities to their waterways by expanding public access to the waterfront (via parks and continuous greenways) and on-water recreation opportunities;
- Advance environmental justice by engaging overburdened local communities in stewardship activities;
- Restore in-water and riparian habitats to support increased biodiversity and ecological function and to mitigate climate change, reduce greenhouse gases, and increase carbon sequestration; and
- Conduct research and provide data in support of community objectives related to climate change mitigation and adaptation, green infrastructure, watershed planning, and water quality.

Communication & Networking

To advance Partner efforts towards these goals, the Ambassador will provide support for achieving the goals of the Partnership by:

- Providing open and timely communications regarding project updates, funding opportunities, upcoming meetings and events, and useful resources;
- Coordinating among partners to reduce duplicative efforts and increase collaboration;
- Providing opportunities for direct community and agency networking and collaboration through regular Partnership meetings and events;
- Increasing community partners' organizational capacities by identifying potential funding sources, assisting with project design and/or implementation, and assessing how federal partners can provide support and technical assistance;
- Promoting efforts to engage the community in stewardship of local waterways, waterfronts, parks, and public green spaces; and
- Working to elevate the successes and ongoing work of all partners via creative outlets, including developing a Partnership Story Map with assistance from the Urban Waters Learning Network.

2023-2024 Partnership Priority Projects *(listed alphabetically)*

The projects listed below have been identified by the Bronx and Harlem Rivers UWFP partners as our shared priorities for 2023-2024. Whether specific efforts or broad areas of focus, they all have significant partner involvement and address significant concerns in the watersheds where the UWFP can contribute.

The Partnership prioritizes activities within each project to mitigate and/or adapt to climate change, particularly:

- managing increased stormwater (including severe events) and sea level rise through green infrastructure/greenway efforts, natural and nature-based shoreline monitoring and restoration, dam assessments and daylighting, and improving water quality.
- mitigating heat island effects through greening initiatives such as tree planting and maintenance, park and garden creation, and closing of canopy gaps.
- reducing atmospheric carbon through increased vegetative carbon sinks and increased sustainable transportation options (i.e. biking and walking).

The Partnership also prioritizes activities that advance environmental justice goals, particularly:

- Increasing and improving green spaces for disadvantaged communities.
- Increasing green space access for communities through events/programs and safer infrastructure (including biking and walking paths).
- Increasing awareness of and connection to education and job opportunities for Bronx residents and students from disadvantaged communities and within minority serving institutions;
- Increasing access to information and community participation in decision-making by local, city, state, and federal agencies.

Each project description includes the following:

- **Partner 2023/2024 Plans** – The involved partners have identified specific project plans they have for 2023 and 2024. The Partnership and Ambassador use these project plans to identify project gaps and opportunities for Partnership support in 2023 and 2024.
- **Partner and Project Needs** – The partners and the Ambassador have worked together to document the specific needs that can be met through the Partnership's 2023 and 2024 activities as well as potential future efforts.
- **Urban Waters 2023/2024 Activities** – The specific actions and goals for the Partnership and the Ambassador in 2023 and 2024.
- **Potential Urban Waters** Support – Identified activities that the Partnership has not committed to accomplishing in the 2023/2024 cycle but will work towards in the next two years and/or consider including in the next workplan cycle.
- **Key Milestones** – Anticipated timeline for the project over the next two years.
- **Expected Outputs and Outcomes** – Anticipated qualitative and quantitative project accomplishments.

Note: This list does not represent a comprehensive list of projects and programs of all Bronx & Harlem Rivers UWFP partners. More information on additional areas of focus for UWFP partners is found in the following 'Partnership Activities' section.

#1: Measuring Success of Natural and Nature-Based Resiliency Features and Supporting Living Shorelines – Bronx and Harlem Rivers

Overview

The Urban Waters Federal Partnership and NY-NJ Harbor & Estuary Program (NYNJHEP) will support the monitoring of natural and nature-based shoreline features (NNBFs) on the Bronx and Harlem Rivers through a Natural Areas Conservancy and CUNY internship program. The project, funded through the Bipartisan Infrastructure Law grant, will support three students in the summer of 2023 to monitor four sites on the Bronx and Harlem Rivers.

This monitoring follows the *Measuring Success* protocols - a project sponsored by the NYS DOS, with funds from NOAA and the New York State Energy Research and Development Authority (NYSERDA), to develop a framework for monitoring natural and nature-based shoreline features (NNBF) throughout New York State. *Measuring Success of NNBF in the Bronx* uses the framework to contribute to two Bronx and Harlem Rivers UWFP goals: restoring in-water and riparian habitats and conducting research to provide data in support of community objectives related to green infrastructure.

Using the protocols, and with support from NYNJHEP/EPA, sites along the Bronx and Harlem Rivers were monitored during Summer 2021 and 2022 by student interns.

The collected data from past and planned monitoring will provide site managers, community organizations, and practitioners throughout the region with information to demonstrate NNBF's capacity to provide ecosystem services, mitigate storm impacts, and contribute to community well-being both locally and across all urban waters. Supporting existing student internship programs will help nurture the next generation of environmental leadership in the Bronx.

Additionally, living shorelines throughout the Bronx offer the opportunity for community resiliency in regard to increased flooding, storm intensity/frequency, water quality, and habitat. The Urban Waters Federal Partnership is assessing the opportunities to support living shoreline research, community programming, education, and design/implementation throughout the Bronx.

Partner 2023/2024 Plans

- NY-NJ Harbor & Estuary Program (NYNJHEP)/EPA will provide financial support for the Natural Areas Conservancy and CUNY students activity as part of its FY 22/23 Bipartisan Infrastructure Law (BIL) Workplan.
- The Natural Areas Conservancy (NAC) will lead the recruitment of CUNY students for the 2023 season.
- NY Sea Grant will support an intern in monitoring the 2023 Bronx River sites.
- NYC Parks will provide technical support for the Natural Areas Conservancy crew of three interns who will assist with NNBF data collection.
- The crew will monitor four sites in the Summer of 2023:
    - Hunt's Point (Bronx River)
    - Starlight Park (Bronx River)
    - Randall's Island Living Shoreline (Harlem River)
    - Muscota Marsh/Inwood Park (Harlem River)
- The New York Restoration Project (NYRP) is forming an advisory council as part of the planning process to improve a wetland area at the north end of Sherman Creek Park. The advisory council will meet four times throughout 2023 to help advance NYRP's conceptual study, including opportunities for living shorelines.

Partner and Project Needs

- Summer 2023 intern management and support.
- Increase awareness among federal agencies of engineering with Nature/Natural and Nature-Based Features regulatory challenges and the needs for technical partnership in legal, governance, and environmental sectors.
- Connecting federal agencies with local communities via in-person meetings to discuss community shoreline concerns (water quality, flooding, habitat enhancement, etc.).
- Improved processes, opportunities, and partnerships for ecological enhancement along the urban waterfront.

Urban Waters 2023/2024 Activities

- The Ambassador will co-manage the NNBF project with NYC Parks, NAC, and with support from NY-NJ HEP staff.
- The Ambassador will support interns by attending measuring protocol training, assisting in-field monitoring occasionally, attending weekly check-in meetings, and providing guidance to interns as needed.
- The Ambassador will serve on the advisory council for the NYRP's Sherman Creek Park restoration planning. As part of the advisory council, the Ambassador will provide information to the Partnership about the conceptual design and share Partnership points of interest regarding the project.
- Improving connection and communication to target groups:
    - Agency, community, and researchers advancing NNBF and Living Shorelines
    - Bronx-based colleges/educational institutions
    - Up-river and up-land organizations (particularly within Westchester County)
    - Resident associations
    - Community Boards
    - Key Manhattan-based organizations

Potential Urban Waters Support

- The Partnership can collaborate with National Oceanic and Atmospheric Administration (NOAA) to support/advance other coastal resiliency projects.
- The Partnership can collaborate with NYC Parks to develop and implement NNBF designs that improve water quality, habitat, and climate change resiliency.
- The Partnership can consider how to use shoreline monitoring research, particularly social protocols, to develop public engagement opportunities in associated regions.

Involved Partners
EPA, US Forest Service, NY-NJ HEP, NYC Parks, NYS Parks, BxRA, NAC, RIPA, NY Sea Grant, NYRP, Pace University

Key Milestones
- Project planning/internship recruitment – Spring 2023
- Student training & site monitoring – Summer 2023
- Internship reporting – Fall 2023
- Sherman Creek Advisory Council meetings – March-December 2023

Expected Outputs and Outcomes
- Three-day training courses held during Summer 2023 to teach student interns how to implement the NNBF monitoring methodology.
- Intern presentations on NNBF project field experience.
- Data to demonstrate the capacity of NNBF.
- Final report of intern field experience and monitoring results.
- Advancement of more effective living shoreline projects throughout the watershed.
- Development of the next generation of environmental leaders.
- Review and development of a conceptual design for Sherman Creek Park wetland/shoreline restoration.

#2: Public Access Advancements through the Harlem River Greenway and Public Programming – Harlem River

Overview

Harlem River Greenway
The Harlem River Greenway is a 30-year-old vision to develop a complete system of bike/walking paths along the Harlem River, connecting community residents to the Harlem River and linking to other recreational bike/ped facilities in NYC and Westchester County. The Harlem River Greenway consists of a series of partner projects to improve public access and recreational resources, advance green infrastructure and habitat restoration, and community engagement.
The recently completed NYC Parks Harlem River Watershed and Natural Resources Management Plan for the Bronx recognized that access to the nine miles of River is severely limited and that meeting long expressed community desire by the Harlem River Working Group for a continuous greenway along the waterfront as well as improved connections from upland neighborhoods is a priority. Working through the Bronx and Harlem Rivers Urban Waters Federal Partnership and the NYNJHEP, BIL funds will be used to support community engagement and planning services that will advance this work. These efforts will accelerate efforts to assess opportunities and implement bicycle and pedestrian improvements under NYCDOT's proposed Harlem River Greenway Implementation Plan, being done in conjunction with NYCDPR and NYCDEP.

Harlem River On-Water Access
Access for boating on the Harlem River is limited and there are no boat houses / boat clubs on the Bronx side of the Harlem River. The State Park has created a dock during its recent renovation, and the UWFP and Harlem River Working Group/BCEQ have supported Wilderness Inquiry programs but there is potential to do more, possibly including additional events that introduce boating to the public, planning work, capacity building for local boat clubs to helping create infrastructure for human powered boat activities.

Partner 2023/2024 Plans

- NY-NJ Harbor & Estuary Program (HEP) will support Harlem River Greenway focused community engagement and communication efforts using Bipartisan Infrastructure Law funding, in coordination with Harlem River Working Group, NYC DOT, and NYCDPR. An RFP will be issued in Spring 2023.
- NYC Parks will support the Economic Development Corporation and private developers in the advancement of the Mill Pond Park Expansion, Bronx Point Esplanade, Bankside Public Access Esplanades, 144th Street Park and Lower Concourse Redevelopment projects.
- NYC Parks will track projects completed to date and work with the UWFP to identify new priorities and partners for implementation.
- The Bronx Council for Environmental Quality (BCEQ), Harlem River Working Group (HRWG), and NYNJHEP will engage/inform NYCDOT's Harlem River Greenway Implementation Plan in conjunction with NYCDPR and NYCDEP.
- BCEQ and HRWG will coordinate the Wilderness Inquiry events in October and an eels project to celebrate Roberto Clemente State Park's 50th Anniversary.
- Billion Oyster Project is creating an activity center at Mill Pond Park which will include a field station with oyster reef and education/program opportunities.

Partner and Project Needs

- Supporting public access on the Harlem River through programming and such resources as increasing capacity of local boat clubs/number of boat houses.
- Coordinating/communicating with Community Boards about the Harlem River Greenway visioning and programming.
- Coordinating with Westchester County contacts to advance cross-county communication and to understand connections to Harlem River habitat impacts.

Urban Waters 2023/2024 Activities

- The Ambassador will work with NY-NJ HEP to support community engagement and communications services through a grant program to support community-led programming and public engagement in assessing opportunities and implementing bicycle and pedestrian improvements under NYCDOT's proposed Harlem River Greenway Implementation Plan.
- The Ambassador will support partner planned on-water programming, including the Wilderness Inquiry, NYSDEC Eels Project at Roberto Clemente, and Bronx-based City of Water Day events.
- The Ambassador will inventory upcoming federal transportation funding opportunities and/or other current federal agency actions that can address greenway challenges.

Potential Urban Waters Support

- The Partnership can help create a map of access and other activities as a first step for understanding what the limitations (programming, capacity, and physical) are for creating new on water activities and possibly a desired network of sites.
- The Partnership can support inquiries in developing a boat house on the Harlem River

Involved Partners
EPA, U.S. Geological Survey(USGS), NY-NJ HEP, HRWG, BCEQ, DOT, NYC Parks, NYCDEP, NYCEDC, RIPA, NYRP

Key Milestones
- NYC DOT hosting public input meetings – April 2023
- NY-NJ HEP issuing public programs' RFPs – April 2023
- Public programs projects – July-November 2023
- Final reports due – January 2024
- Second round of funding/grant proposals – Spring 2024

Expected Outputs and Outcomes
- Community funded programming, communication, and education about the Harlem River Greenway.
- Robust community participation in the development of the Harlem River Greenway Plan.
- Identification and advancement of public access to and along the Harlem River, including creation of the Harlem River Greenway Plan

#3: USACE and NYC Parks Ecosystem Restoration - Bronx River

Overview
The U.S. Army Corps of Engineers (USACE) and New York City Parks are partnering to restore fish passage and enhance riparian and ecological conditions at the Bronx Zoo Double Dam and the New York Botanical Garden Stone Mill Dam on the Bronx River. Previously, USACE completed a Hudson Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study to develop and propose ecosystem restoration projects at five sites in the Bronx River watershed. The two selected Dams will advance the establishment of a sustainable river herring population in the Bronx River and contribute to regional restoration efforts to protect anadromous fish.
The two target dams:

1. **New York Botanical Garden Stone Mill Dam** – open seven additional river miles, up to the next upstream barrier in Westchester.
2. **Bronx Zoo Double Dam –** open an additional five acres of aquatic habitat over 0.6 river miles.

Partner 2023/2024 Plans
- USACE and NYC Parks will conduct environmental review and cost-benefit analysis for fish passage alternatives, to be included in an Engineering Documentation Report (EDR).

Partner and Project Needs
- Additional research on fish passage to inform dam removal.
- Monitoring for water level/quality as impacted by dam removal.
- Providing information and sustained communication to the public and elected officials on the benefits of dam removal.

Urban Waters 2023/2024 Activities
- The Partnership will support data dissemination and communication to elected officials and the public.

- The Urban Waters Federal Partnership will seek grant opportunities, especially through the Fish and Wildlife Service, to support partner-led fish passage research.
- The Partnership to support USGS in funding Bronx River streamgages to monitor water quality/level and contribute data to dam removal study.

Potential Urban Waters Support

- The Partnership can collaborate with Save the Sound and Westchester County to contribute data for the NAACC Dam Database. https://streamcontinuity.org/naacc

Involved Partners

USACE, NYC Parks, BxRA, USGS, Westchester County Department of Planning

Key Milestones

- Engineering Documentation Report complete – 2024

Expected Outputs and Outcomes

- Engineering Documentation Report (EDR) and fish passage design for the two Bronx River Dams.
- Approximately 12 miles of expanded fish habitat on the Bronx River.
- Continued operation of the USGS Bronx River streamgage for continuous streamflow and water quality monitoring on the Bronx River.

#4: Water Quality Monitoring

Overview

The Bronx and Harlem River watersheds were once varied ecosystems covered by forests, meadows, and marshes. Today, much of the natural landscape has been replaced by dense urban development, which has contributed to pollution and contamination of the waterways. While data show that both rivers have seen improvement in water quality since the institution of the Clean Water Act (for example, see this report from USGS on the Harlem River), both waterways are plagued by combined sewer overflow pollution during wet weather and legacy pollutants and floatable trash are also persistent. It is important to understand the pollution sources, types, and concentrations to think about possible interventions and solutions, so a major focus of multiple partners is on quantifying pollution inputs to the Bronx and Harlem Rivers as well as collecting data on the success of restoration projects.

Much of the work described below also complements or extends monitoring work by NYC DEP to characterize the condition of the Bronx and Harlem River to develop Long Term Control Plans (LTCP) for these waterbodies. NYC DEP's Citywide LTCP encompasses the majority of New York Harbor, including the Harlem River, and the Bronx River has its own LTCP. The goal of the LTCPs is to identify the appropriate combined sewer overflow (CSO) controls necessary to achieve waterbody-specific water quality standards consistent with the Federal CSO Policy and the water quality goals of the Clean Water Act.

#4a: Water Quality Monitoring on the Harlem River

USGS Water Quality Monitoring on the Harlem River

Enterococcus transect sampling & microbial source tracking

Beginning in Fall 2017, USGS in coordination with EPA and the Interstate Environmental Commission (IEC) began sampling transects of the Harlem River to assess the distribution of enterococcus along and across the water surface

as well as at depth. More samples were collected in 2019, both pre- and post-storm events. The data collected will help improve understanding of the transport of pathogens that pose a risk to human health in the Harlem River and will help EPA more accurately model pathogen concentrations following storm events. Results will inform stakeholders and recreational users that are more likely to interact with water that may have higher pathogen concentrations due to proximity to CSO outfalls and minimal tidal flow. Additional microbial source tracking methods will also be used at selected sites to evaluate differences in pathogen presence, type, and transport.

Continuous & storm surge monitoring at Roberto Clemente State Park

In 2018, NYC DEP installed a continuous water quality monitor at Roberto Clemente State Park to support monitoring efforts on the Harlem River. Partners are currently exploring avenues for sharing this continuously collected data. Co-located with the DEP sensor is a USGS storm surge monitoring bracket that will allow for rapid deployment of USGS monitoring equipment as needed during hurricanes or other storms. The localized storm-tide data collected from this type of deployment is critical for emergency management agencies to monitor storm impacts and make public safety decisions.

Tibbetts Brook Daylighting

Tibbetts Brook was once a major tributary to the Harlem River. Flowing from north to south and originating in Westchester County, the brook's flow was altered beginning in the late 1600s to support development. For nearly a century, the lower section of the stream has been redirected underground into the combined sewer system where on dry days, it flows to one of NYC's 14 wastewater treatment plants. However, during wet weather, the stream and associated combined sewage most often overflow into the Harlem River, contributing more than 560 million gallons of polluted discharge into the waterway every year. Indeed, the CSO containing Tibbetts Brook is the largest by annual volume in the entire city.

NYC Parks and NYC DEP are collaborating to daylight the Tibbetts Brook and extend the Putnam Greenway. In 2023, New York City announced the purchase of the CSX property, a key extension point of the Putnam Greenway and the Tibbetts Brook Daylighting. Daylighting the Tibbetts Brook and reconnecting it to the Harlem River has been identified as a key project in NYC Parks' Van Cortlandt Park 2034 Master Plan (2014), NYC DEP's Combined Sewer Overflow Long-Term Control Plan for Citywide/Open Waters Recommended Plan Summary (2020), and Mayor Bill de Blasio's report on The New Normal: Combatting Storm-Related Extreme Weather in NYC (2021). The expected phases of the daylighting includes: 1) Restoration of wetlands in Van Cortlandt Park and construction of a new weir structure to mitigate storm-driven flooding in Van Cortlandt Park while also diverting the Tibbetts Brook baseflow from the sewer system; 2) adjustments to water levels on Van Cortlandt Lake and daylighting of the stream through the CSX property and construction of an extension to the Putnam Greenway; 3) Reconnection of Tibbetts Brook to the Harlem River via pipes that travel underneath the Metro North rail lines that run along the Harlem River.

Partner 2023/2024 Plans

- NYC Parks and DEP's Tibbetts Brook Daylighting efforts include completing the project's design, engineering, and contract drawings.
- USGS will continue to assess how water quality is impacted by resuspension of shoreline and bed sediment at areas along the Harlem River at points of public access.
    - Focus on Roberto Clemente State Park using an in-situ fecal bacteria analyzer and water-quality sonde.
    - Continue to work with NYC Parks, NYCDEP, and NYS Parks for access to sampling location and for available data.

Partner and Project Needs

- Funding support for additional water quality monitoring along the Harlem River, especially along the Bronx Kill.

- Evaluation of how the Partnership can assist in bringing more Green Infrastructure to the Harlem River watershed.
- Strengthened connections with Westchester agencies and organizations.
- Coordinated management of aquatic invasive species, trash, and illicit discharges.
- Improved transparency on the threat from contamination/pollution in waters, especially at points of access.

Urban Waters 2023/2024 Activities

- The Ambassador will support the Tibbetts Brook Daylighting project through public engagement and communication on the importance of the daylighting project.
- The Partnership will work with USGS to support understanding of the hydrology in Westchester County as it affects downstream Tibbetts Brook and wetlands.
- The Ambassador will strengthen relationships in Westchester County, particularly through Westchester County Soil and Water Conservation and Save the Sound.

Potential Urban Waters Support

- The Partnership can potentially work with NYC DEP's permitting department to fill gaps in public outreach related to floatable debris.

Involved Partners

USACE, NYC Parks, BxRA, USGS, NYC Soil and Water Conservation, Westchester County Department of Planning

Key Milestones

- Tibbetts Brook daylighting design completion - Spring 2023
- Anticipated Tibbetts Brook daylighting construction - Summer 2024

Expected Outputs and Outcomes

- Improved water quality, storm-water management, habitat restoration, and CSO reduction as a result of Tibbetts Brook daylighting projects
- Data to support potential fish passage projects
- Partner collection of data on a variety of water quality indicators
- Promotion of partner programs and monitoring results via webinars and email blasts
- Meetings with partners to provide technical and capacity building support as needed
- Increased knowledge about local water quality issues
- Improved water quality conditions due to targeted interventions based on collected data.

#4b: Water Quality Monitoring and Trash/Floatable Removal on the Bronx River

Floatable Waste

Floatable trash is a pervasive problem in urban waterways. According to EPA's Trash Free Waters program, one-third to two-thirds of litter found during beach cleanups and surveys nationwide is single-use, disposable plastic packaging from food and beverage-related goods.

BxRA's initiative called Project WASTE (Water and Street Trash Elimination) is a volunteer-led community science program that engages local stewards in collection and assessment of trash from the Bronx River. Participants put on waders and get into the Bronx River to remove and categorize floating trash, which helps keep the water clean as well as allows us to identify potential sources of trash to the Bronx River. Since 2016, BxRA has worked with more than 3,500 volunteers to remove more than 250,000 pieces of trash weighing more than seven tons from in and around the Bronx River.

Additionally, HEP's Stopping Trash Where It Starts initiative has found similar results in the Lower Passaic River Watershed (via a 2017 study conducted in partnership with the Lower Passaic Urban Waters Federal Partnership) and in the Bronx and Harlem River Watersheds through a second round of Stopping Trash Where It Starts (funded in 2018-2019 by EPA's Trash Free Waters program).

Multiple other partners, including NYC Soil and Water Conservation, NYRP, RIPA, and VCPA are also engaged in efforts to develop methods and strategies for addressing floatable trash in their respective turfs.

The data collected by partners is being used to inform trash reduction strategies, focusing on targeted behavioral changes related to single-use food and beverage packaging and track down of persistent pollution sources, to improve water quality in both the Bronx and Harlem Rivers. Partnership members also serve on the Bronx Solid Waste Advisory Board that was recently reconstituted by the Bronx Borough President; this is another opportunity to use partner data to inform solid waste management strategies that will help reduce floatable pollution.

Project Water Drop

Bronx River Alliance Project trains community volunteers to monitor Enterococcus bacteria through their Project Water DROP (Detecting River Outfalls and Pollutants) program. Community scientists participate by collecting water samples at 15 locations along the entire length of the Bronx River that are assessed for Enterococcus, which is a genus of bacteria that indicates the presence of raw sewage. Monitoring along the entire length of the river allows the Alliance to identify pollution hot spots and track down persistent sewage sources.

USGS monitoring in the Bronx River watershed

USGS has partnered with the Bronx River Alliance on a number of water quality studies to complement and extend the Alliance's water quality monitoring program, including quantification of PFAS, pharmaceuticals, and herbicides in the river and microbial source tracking (MST) work to determine whether persistent elevated fecal indicator bacteria levels are from human, domestic pet, and/or water fowl sources.

Partner 2023/2024 Plans

- Bronx River Alliance will continue to analyze and remove trash from the trash boom at 233rd Street with students and volunteers, and do outreach to encourage people to take care of their environment
- Bronx River Alliance is making a concerted effort to address some of the point sources of pollution to the river this year by adding new water quality monitoring sites in the Bronx and doing a big push to get more volunteers to collect water samples. They are developing quick, easy instructions that folks can use to make reports.
- USGS collected water samples at two points along the Bronx River over the course of the summer/fall 2022. Collected samples will be processed in 2023 and analyzed for microplastics in 2024.

Partner and Project Needs

- Strengthened connections with Westchester agencies and organizations.
- Coordinated management of aquatic invasive species, trash, and illicit discharges.
    - Improved transparency on the threat from contamination/pollution in waters, especially at points of access.

- Additional funding for USGS Bronx River streamgage.

Urban Waters 2023/2024 Activities

- The partnership will support trash removal efforts through educational one-pagers/general communication and enhance participation in citizen science projects, meetings, and events.
    - The Partnership will help disseminate Bronx River Alliance instructions to educate community members on reporting illicit discharges into the Bronx River.
- The Ambassador will strengthen relationships in Westchester County, particularly through Westchester County Soil and Water Conservation and Save the Sound.
- The Partnership will support USGS in securing funding for the Bronx River stream gauge.
    - The Ambassador will inquire about US Forest Service RFP for riparian or shoreline/bank restoration to reduce plastic and runoff.

Potential Urban Waters Support

- The Partnership can potentially work with NYC DEP's permitting department to fill gaps in public outreach related to floatable debris.
- The Partnership can support Bronx River Alliance in implementing a microplastics monitoring strategy.

Involved Partners

USACE, NYC Parks, BxRA, USGS, NYC Soil and Water Conservation, Westchester County Department of Planning

Key Milestones

- Project WASTE collecting >250,000 pieces of floatable trash total - 2023
- 1 or more Westchester MS4 pipe inspection and repair for Project Water DROP - 2023

Expected Outputs and Outcomes

- Partner collection of data on a variety of water quality indicators
- Promotion of partner programs and monitoring results via webinars and email blasts
- Meetings with partners to provide technical and capacity building support as needed
- Increased knowledge about local water quality issues
- Improved water quality conditions due to targeted interventions based on collected data
- Presentation of data, methods, and lessons learned at local and national conferences
- Coordination with partners to produce one-pagers in support of trash reduction projects

Additional Partnership Activities *(listed alphabetically)*

In addition to the priority projects described above, there are additional Partner activities that the UWFP and Ambassador will support in 2023-2024.

Bridge Park South - waterfront park

The Bridge Park South project involves development of a nearly five-acre park, a half-mile extension of the Harlem River Greenway between the High Bridge and the Alexander Hamilton Bridge. The project involves coordination with community members and other agencies, including USGS who has been supporting the project through water and sediment quality monitoring at the site. The project will utilize more than $5.6 million in funding from NYS DOT, New York City Council, the Office of the Bronx Borough President, and the New York State Department of State (NYS DOS). NYC Parks will complete federal environmental and design reviews and begin the contract procurement review process and will use water and sediment quality data from USGS to inform site design.

Urban Waters Support: The Partnership will work with community partners to coordinate with State and City DOT towards equitable and safe pedestrian and bicycle access to the site The Ambassador will assist USGS in acquiring funding for continued water quality monitoring. The Ambassador will also support water quality data dissemination to NYC Parks to inform park design.

Bronx and Harlem Rivers Watershed Planning

The NYC Parks's Harlem River Watershed and Natural Resources Management Plan for the Bronx (funded by the New York State Department of State's Local Waterfront Revitalization Program) was completed after multiple years of effort that built upon past planning efforts by BCEQ and others. This watershed plan is intended to serve as a road map for agencies, community partners, and other stakeholders in pursuing coordinated resource protection and restoration in the watershed. The four primary goals for the Plan: 1) protecting, restoring, and enhancing natural resources; 2) managing stormwater; 3) promoting access and connectivity; and 4) engaging and educating the public to increase awareness.

The Bronx River Intermunicipal Watershed Management Plan was published in 2010. The Bronx River Alliance, NYC Parks' Natural Resources Group, NYS DOS, and Westchester County Department of Planning worked to gather input from more than 100 stakeholders to develop this plan, which presents ten strategies to develop an integrated framework for watershed management. Currently, Bronx River Alliance, with the support of NYC Parks, is working with a consultant to gather input from community members about concerns they have related to flooding, urban heat island effect, access to green spaces along the river, etc. for contributions to the plan.

Urban Waters Support: The Partnership will support BxRA by sharing information and increasing attendance at their community input meetings and can potentially lend support in applying to federal transportation grants and with specific projects identified in the Bronx River Watershed Plan.

Civic engagement and job training programs

Actively engaging community members in stewardship and job training programs is a focus for multiple partners, including Bronx is Blooming, South Bronx Unite, and Sustainable South Bronx.

Urban Waters Support: The Partnership will continue to support the efforts of these NGOs and when appropriate, can assist in reaching out to further federal involvement, either through grant opportunities or providing technical expertise.

Completing the Bronx River Greenway

Currently, 19 miles of the 23-mile Bronx River Greenway are complete. There are major missing links as well as several smaller improvement projects that need consistent advocacy efforts to move forward. The East Tremont missing link is a series of dangerous set of intersections that has been funded for safety improvements since 2008, but work has yet to break ground. The Yonkers missing link is a 3-mile segment from the NYC border to Bronxville where there are no shared use paths or access points to several green spaces, essentially splitting the Bronx River Greenway into a 12-mile segment in Westchester and a 7-mile segment in the Bronx. Starlight Park Phase II, though currently a missing link, will open in April. It will create a 1.3-mile connection from E 177th Street to Garrison Avenue in Hunts Point with just one road crossing at Westchester Avenue.

Urban Waters Support: The Partnership can assist in securing federal funding for infrastructure improvements, help with coordination when dealing with federal waters near the mouth of the river, and linking to state and national level parks and trail programs.

Environmental advocacy

Securing additional investment in green infrastructure, sustainable stormwater management, and local green spaces is a focus for multiple partners, including BCEQ, BxRA, Riverkeeper, Loving the Bronx, Bronx is Blooming, the SWIM Coalition, and NYRP

Urban Waters Support: Federal partners support NGO advocacy efforts by providing technical expertise and data, particularly around issues related to water quality and green infrastructure monitoring.

Environmental education

Educational environmental programming for both youth and adults is a focus for many partners, including BCEQ, BxRA, VCPA, RIPA, NYRP, BOP, Rocking the Boat, and Bronx is Blooming.

Urban Waters Support: Federal partners support NGO education efforts by providing technical expertise and data, particularly around issues related to water quality and green infrastructure monitoring.

On-water recreational access and programming

Multiple partners have efforts underway to reconnect communities to their rivers through programmed on-water recreational activities (e.g., kayaking and canoeing). Rocking the Boat and BxRA put hundreds of people on the Bronx River every year, and BCEQ, Van Cortlandt Park Alliance, NYC and NYS Parks, and Canoemobile actively seek out opportunities to safely put people on the water in the Harlem River watershed as well.

Urban Waters Support: The Partnership will continue to promote safe and accessible on-water recreation activities provided by local NGOs and local stakeholders, and will work with partners to identify additional resources to advance these efforts.

Oyster and living shoreline restoration

There are numerous efforts underway to restore in-water and riparian habitats to support increased biodiversity and ecological function on both the Bronx and Harlem Rivers. In 2020, Billion Oyster Project, in partnership with NYC Parks, BxRA, Rocking the Boat, and HRF, installed one of their largest oyster restoration projects in the NY Harbor region to date in Soundview at the mouth of the Bronx River. Also in 2020, NYRP installed a living shoreline comprised of oyster castles, marsh vegetation, and ribbed mussels at Swindler Cove, in Northern Manhattan on the Harlem River.

Living shoreline design and implementation is also a focus for other members of the Partnership (e.g., RIPA, NYC Parks, BCEQ, Waterfront Alliance, HEP) and securing funding to incorporate softer shorelines and restore both in-water and riparian habitat where feasible will continue to be a priority for the Partnership.

Urban Waters Support: The Partnership will assist with identifying funding sources for potential living shoreline and in-water habitat restoration projects, and provide technical support when possible (see NNBF monitoring project above).