

Rainwater Harvesting in the Bronx River Watershed and Beyond

New York City receives approximately 43 inches of rain each year, and much of this precipitation flows into the pipes of our combined sewer system leading into a nearby treatment plant. With each heavy rain, these facilities are overwhelmed by excess volume and must be bypassed until the storm subsides. This causes combined sewer overflows (CSOs), which release a mix of untreated sewage and stormwater into our local waterways, contributing to unhealthy water quality conditions. The goal of the Bronx River Alliance's Rainwater Harvest Project is to capture stormwater before it enters the overburdened combined sewer system and contributes to CSOs and pollution.

Throughout New York City, green infrastructure projects are underway to capture water as it falls and treat it as a resource rather than a waste, thereby reducing flooding and inputs to CSOs. In an urban setting such as the Bronx, most of the area is covered by pavement and buildings, with little green space to absorb excess runoff. The Bronx River Alliance installed nine rainbarrels at a variety of locations throughout our watershed to capture runoff from the roofs of buildings, providing a source of water for plants to increase vegetation at each site.



Finding appropriate locations for installing rainbarrels was the first challenge of this project. The basic requirements were to identify buildings that were equipped with gutters and were located within the targeted sewersheds where combined sewer overflows occur. There also had to be a connection to the combined sewer system for overflows. Each potential site was assessed for its suitability and needs, such as the accessibility of vegetated areas for making use of the water being collected.

The locations of the nine rainbarrels installed by the Bronx River Alliance are shown on this map, marked by blue dots. A variety of locations were selected throughout the Bronx, including a park comfort station, community center, boatbuilding education center, private homes, public housing and an apartment building. The rainbarrels captured and used water that would otherwise have ended up in the sewer system, contributing to CSOs.

Each property owner was required to maintain and use the rainbarrel, and provide a monthly report on water usage. This information will be used to evaluate the effectiveness of this project, by assessing how much of the potential water from the site was captured and used. This project raised awareness about the impact of stormwater on the Bronx River, and added much-needed green space to the urban environment.





Installing a rainbarrel is a great way to meet your watering needs directly from rainfall, capturing water during rainy periods and storing it for use when you need it. The process is simple, and there is a step-by-step guide created by GrowNYC available at: <http://bronxriverdata.org/puma/images/usersubmitted/repository/RWHhowto.pdf>.

Here are some of the basics:

- Rainwater is captured from the roof before it flows to the ground as waste
- The downspout is detached from gutters and re-connected to a pipe leading to a rainwater barrel
- The barrel collects water until it is full, at which point the excess water is diverted into an overflow pipe
- The overflow pipe leads to a garden or other catchment system; or in some cases, back to where the outfall from the gutters was previously located
- Rainbarrels store water for use in gardening, car washing, and other non-potable uses
- Rainbarrels range in size from 55 to 500 gallons
- They come in a variety of shapes, designed to meet the needs of the site
- Costs range from \$200 to over \$2,000 depending on the installation needs

The benefits to harvesting rainwater are many. It reduces the volume of water entering the sewer system, helping to reduce flooding and keeping polluted runoff from entering the river. It conserves water and reduces the amount drawn from reservoirs. Rainbarrels store water for use during dry spells and supply water to gardens and plantings around the Bronx. The Bronx River Alliance's rainwater harvesting program helps to promote community involvement through education and volunteering, and raises awareness on how our actions on the land impact our local waterways.

To see rainwater harvesting in action, visit the park house at French Charley Playground in Bronx Park, map: <http://www.nycgovparks.org/parks/bronxpark/map>

Please consider installing a rainbarrel and raingarden on your property. The benefits are many and you can feel good about making New York City a little greener. If you need technical assistance with maintenance or installation, contact us for details on rates and availability.

Funded by a grant from the National Fish and Wildlife Fund (NFWF) through the Bronx River Watershed Initiative, this project is part of a larger effort to capture stormwater runoff and reduce combined sewer overflows in the Bronx and around New York City.