



Friends of the Old Croton Aqueduct

Newsletter

No. 49, Summer 2015

The High Bridge Reopens! Croton Aqueduct Centerpiece Is Once Again A Destination

Charlotte Fahn

Joy, pride, and jubilant anticipation reigned supreme on the High Bridge on the morning of June 9, when happy crowds approaching from both ends met in the middle and raised a cheer to mark the official reopening of the historic pedestrian span. The occasion joined the bridge's inspiring origin as the engineering centerpiece of the first Croton Aqueduct, New York City's earliest supply of pure water, with its future as a public space for the metropolitan region and a crossing that reconnects the Highbridge and Washington Heights neighborhoods of the Bronx and Manhattan.

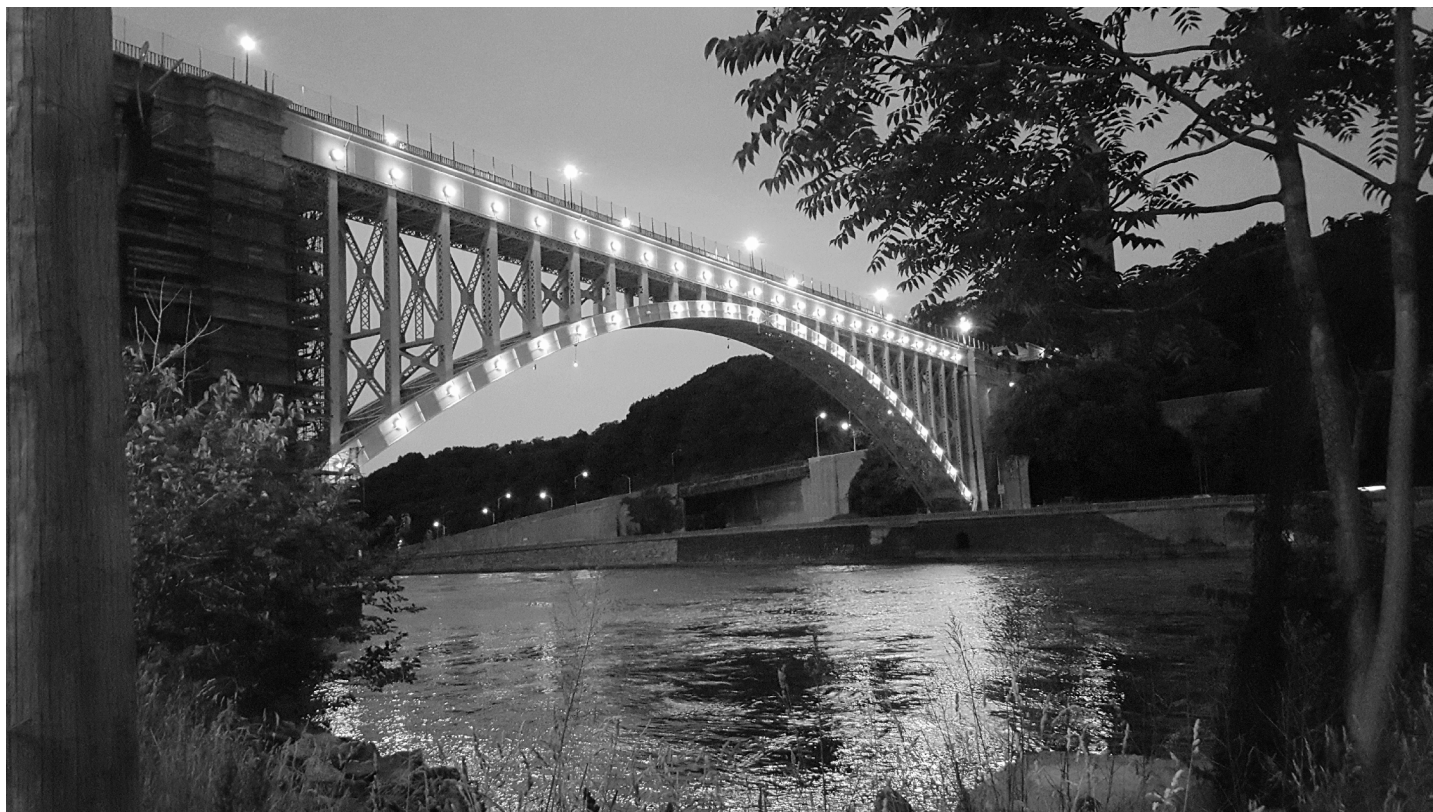
New York City Parks Commissioner Mitchell J. Silver presided at the ceremony. He and elected officials from both boroughs paid tribute to all those who, over the last two decades, had made this day possible. Jets of water spouted from a city fireboat on the Harlem River some 120 feet below the walkway. Two middle-schoolers from the Bronx group, Highbridge Historians, gave a spirited account of the bridge's water supply history. The Tiger Band from Inwood and Highbridge Voices, student



*Crowd at the Manhattan end of the High Bridge as ribbon is cut on opening day.
(Courtesy of NYC Dept. of Environmental Protection)*

choristers, performed. Afterwards, Commissioner Silver donned a straw hat while a colleague sported a frilly parasol, evoking the years when the bridge was a favorite tourist destination for Sunday promenades.

The High Bridge (the city's oldest existing bridge) is about a quarter-mile long and its walkway 17 feet wide and about 120 feet above the water. By carrying the water across the Harlem River through pipes still beneath the walkway, the bridge resolved the question of how best to bring Croton water from the mainland to



The High Bridge, newly illuminated. (Photo by A. Mukheja)

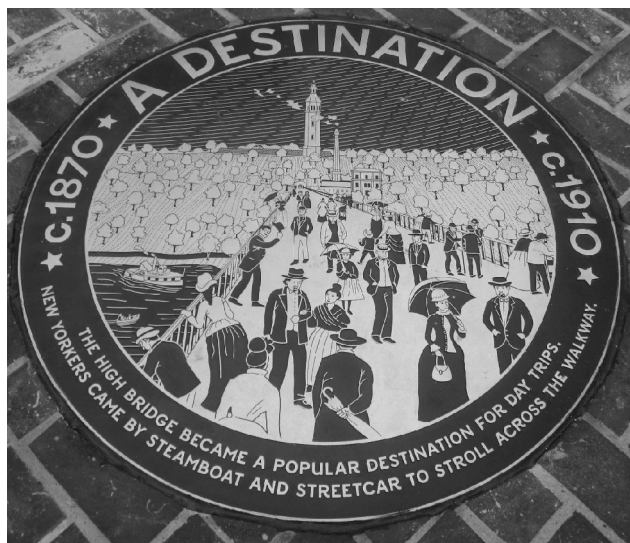
Manhattan Island. After reaching Manhattan, the water again flowed through a masonry conduit to New York City, which at the time extended only from the Battery to about 23rd St. Built on 15 beautiful, Roman-style granite arches, the High Bridge was completed in 1848. The bridge closed to the public in about 1970. It has never had vehicular traffic.

The Work. Anyone familiar with the bridge in the past will notice a number of changes. Most importantly, a ramped structure has been adjoined to one side of the bridge at both ends to provide access for visitors using wheelchairs, bikes, and strollers. Benches have been added and striking bronze medallions set in the brick paving, illustrating highlights in the bridge's history. An 8-foot-high steel mesh fence has been installed. And the steel span, which in 1928 replaced the five arches over the river, is now brilliantly lit at night.

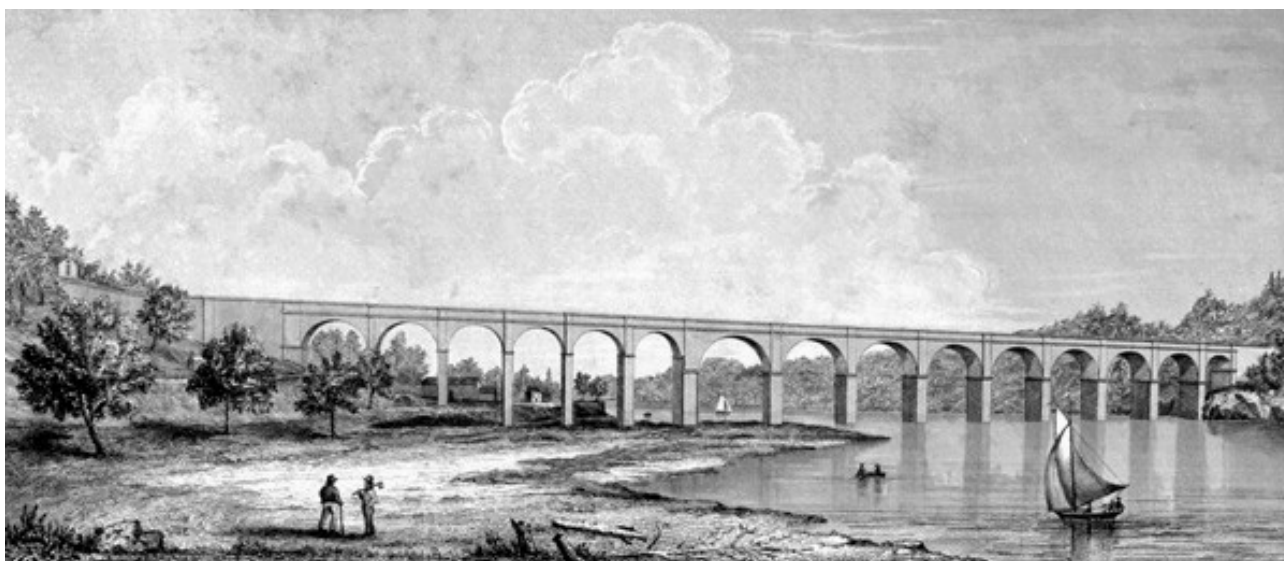
The bridge received a top-to-bottom, inside-and-out, \$61.8 million, nearly three-year-long rehabilitation, its first ever. Work included complete restoration of the pipe chamber (the "attic") below the brick walkway; relaying of the bricks, using Rosendale (natural) cement mortar; cleaning and restoration of the beautiful, historic low railing, which now sits inside the new safety fence; paint removal, repair, and repainting of the steel span; and installation of new lights and gates. A major exterior improvement is not visible to those standing on the bridge—the stonework has been scrubbed clean, making the bridge again seem almost ethereal when seen from a distance.

In a tribute to John B. Jervis, chief engineer during the Aqueduct's construction, Bryan Diffley, Project Manager of the just-completed work, comments:

"Jervis' structural use of stone was fantastic. He



One of the bronze medallions set into the High Bridge walkway, a new feature of the reopened bridge. (Photo by R. Fahn)



"Croton Aqueduct at Harlem River," Plate XIX from Illustrations of the Croton Aqueduct by Fayette B. Tower, New York and London, Wiley and Putnam, 1843.



*A city fireboat joins the celebration.
(Photo by T. Tarnowsky)*



The Bronx chorale group Highbridge Voices performed during High Bridge opening ceremonies. With them is Bronx Borough President Ruben Diaz, Jr. (Photo by C. Fahn)



Bikers strolling across the High Bridge. (Photo by R. Fahn)



Banner created by Hike the Heights walkers on National Trails Day, 2015

made the piers hollow to save weight on the foundations and to allow any moisture that infiltrated the structure to drain freely. He knew that moisture is like a cancer to any structure. Designing all the elements to drain freely was simple and elegant engineering, the work of a master."

Recognition. The campaign to reopen the bridge, led by the Parks Department, extended over nearly two decades, involving a great many city staffers, elected officials, advocates, and community activists. Especially singled out on June 9, to universal and richly merited applause, was Ellen Macnow, Parks' point person in the effort for more than 15 years.

The Friends of the Old Croton Aqueduct were recognized, among others, for contributing to the success of the project, particularly for its role on the High Bridge Coalition Steering Committee. Starting in 2001, this group, headed by Parks and including the Department of Environmental Protection and several nonprofits,

worked to build local and citywide awareness of the bridge and its gateway parks. Support came from Partnership for Parks with early participation by the National Parks Service Rivers and Trails Program. The Friends also contributed their research, expertise, and long-term advocacy to the effort.

Design of the restoration and new additions to the bridge was by

Li/Saltzman Architects. Construction was carried out by Schiavone Construction Co. under the city's Parks Department and Department of Design and Construction. Artists from DDC's Creative Services group interpreted historic images for the bronze medallions, which are likely to become among the most popular features of the bridge.

Plan a Visit! Local residents are eager to enjoy the bridge, commuters plan to get to work using it, grandparents on one side expect more visits with families on the other side, Bronx kids can again speedily reach High Bridge Pool, hikers can get creative with new routes, New Yorkers can relearn the history of their magnificent water supply, transportation buffs and city lovers will delight in the views.

An outing to the bridge can be combined with a visit to other gems like Gould Memorial Library in the Bronx and Morris-Jumel Mansion, the Hispanic Society, Trinity Cemetery, and the Little Red Lighthouse in Manhattan. So – come one, come all! The bridge is open now, from 7am to 8pm; public festivities launched the summer-long Season of the High Bridge on July 25.

The High Bridge is part of New York City's park system, administered by the Department of Parks & Recreation. The Friends' map/guide, *The Old Croton Aqueduct in New York City*, has been updated with a label giving brief directions for reaching the bridge and can be ordered from www.aqueduct.org. More detailed directions are on the website and on page 7. See also the Parks Dept.'s site at <http://www.nycgovparks.org/park-features/highbridge-park/planyc>.



Ellen Macnow, High Bridge Project Coordinator, Capital Division, NYC Department of Parks & Recreation, at the opening day celebration. (Photo by C. Fahn)

Excerpts from original draft of letter by John B. Jervis to: "The Honourable the Board of Water Commissioners of the City of New York"

30 June, 1848

Gentlemen,

The only structure on the Aqueduct that for some time past has been unfinished, is the bridge across Harlaem river....

It will be necessary to have an iron railing on the coping about the gatehouses. No steps have been taken to obtain this railing. It has been delayed in consequence of the proposition under consideration to extend an iron railing over the parapets of the bridge....

It was not originally intended to put a railing on the parapets... Which rise two feet above the covering over the pipes...

But the Bridge is now a place much resorted to. When completed it is probable numerous visitors will pass along it and there may be those who will not exercise all the care necessary in walking at so great a height. Doubtless many will walk on the coping of the parapets, and without a railing serious accidents may occur.

This is a serious item of expense; but the great resort, indicated by the numerous visitors to the work during its construction, induces the belief that such protection will be necessary for those that will hereafter visit it, when there will be no obstacle to passing freely along the top of the bridge....

Respectfully Submitted,
John B. Jervis
Chief Engineer
N.Y. Waterworks

Pedestrian Bridge to End Aqueduct Trail Detour in Van Cortlandt Park

New Croton Aqueduct Returns to Service

A new pedestrian bridge connecting the Shandler Recreation Area and Croton Woods in Van Cortlandt Park will reconnect two large parts of the park that were cut apart by the 1950s construction of the Major Deegan Expressway. The bridge, if not directly on the Old Croton Aqueduct, will be so close to it that in effect it will also reconnect the trail, eliminating the detour to 233rd St. that has bedeviled Aqueduct walkers for decades. The estimated completion date is 2019.

The bridge is the result of an advocacy campaign conducted over the last 10 years or more by community groups from neighborhoods ringing the park, Friends groups—especially Friends of Van Cortlandt Park and including Friends of the Old Croton Aqueduct—and numerous elected officials. The announcement that \$12 million to fund construction had been secured was made at a press conference in the park on May 8, presided over by Commissioner Emily Lloyd of the New York City Department of Environmental Protection. A third of the funds will come from DEP, a third from the Parks Department, and a third from state legislators. Commissioner Lloyd, Parks Commissioner Mitchell Silver, and other city and state officials lauded the broad collaboration that has made the bridge possible.

This bridge will resolve the second of three major discontinuities in the Aqueduct trail. The first is the High Bridge, which reopened on June 9. The Van Cortlandt Park span is the second. The third is the detour around the NYS Thruway (Route 287) in Tarrytown. A pedestrian bridge to eliminate this gap is still in the advocacy stage and needs strong citizen support.



Rock drilling underway to connect the New Croton Aqueduct to the Croton filtration plant. (Photo courtesy of NYC Dept. of Environmental Protection)



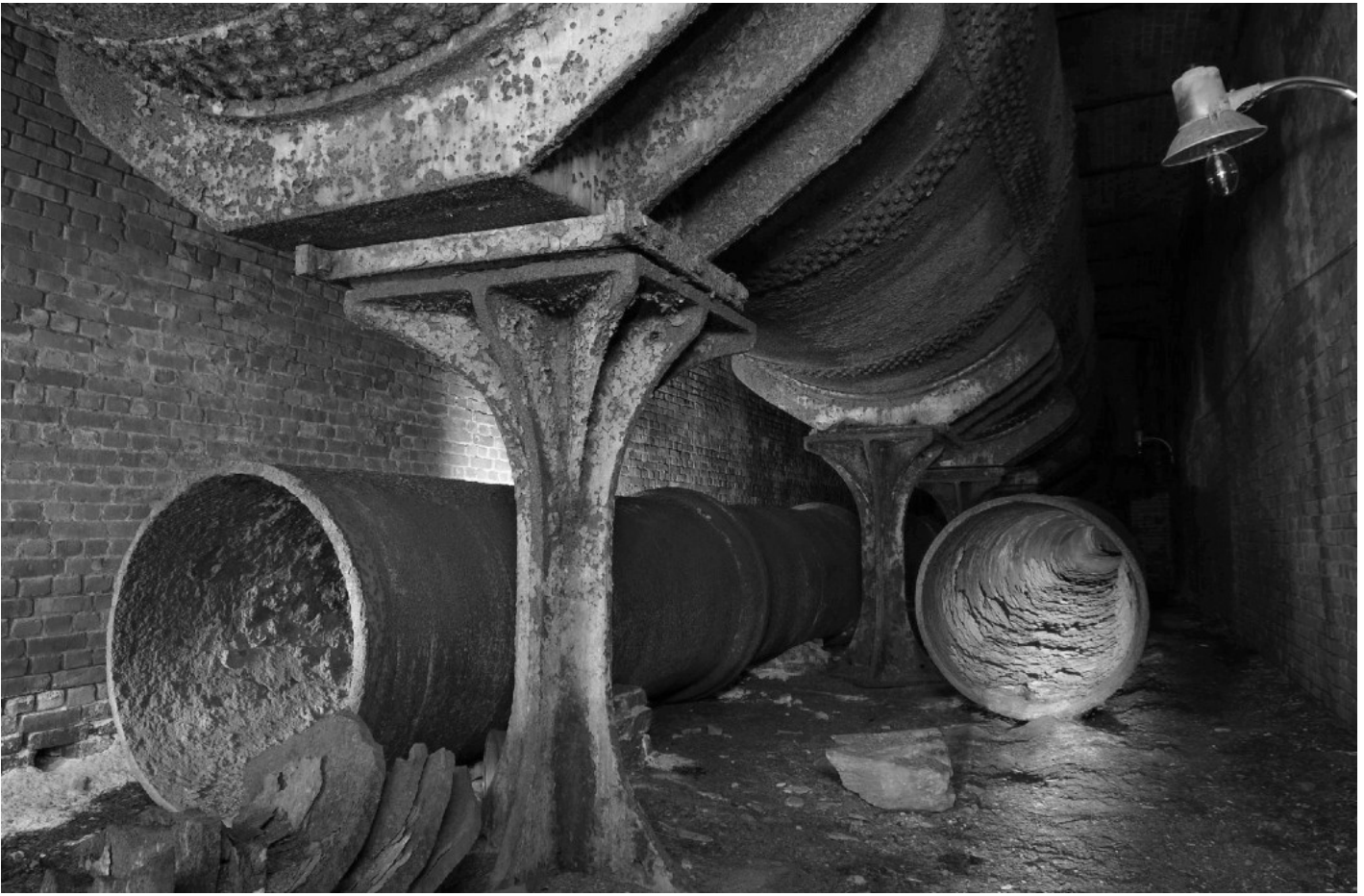
NYC Dept. of Environmental Protection Commissioner Emily Lloyd and Bronx officials announcing pedestrian bridge reconnecting both the Aqueduct trail and Van Cortlandt Park. (Photo by T. Tarnowsky)

There is more good news for Aqueduct walkers: the broken stairway that is another obstacle to following the trail in Van Cortlandt Park is also being addressed. It will be replaced by an ADA-compliant path, part of a three-year project on the Deegan Expressway recently begun by the state Department of Transportation.

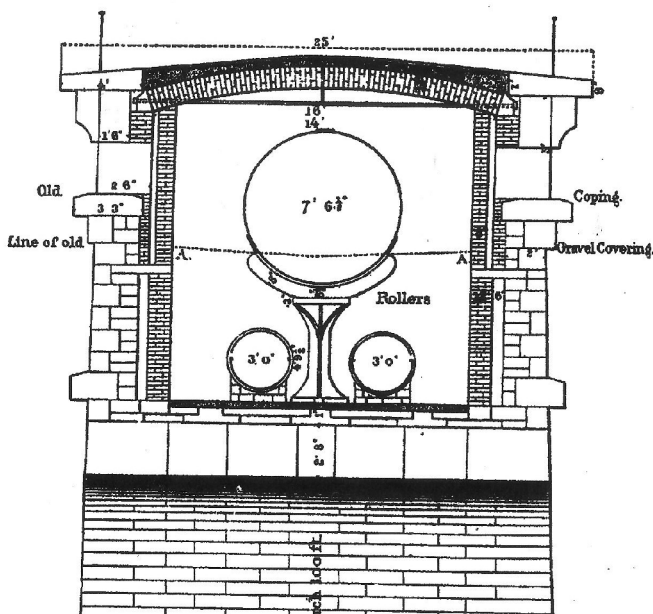
New Croton Aqueduct Online. A new chapter in the history of the New Croton Aqueduct opened with the announcement by the city's Department of Environmental Protection, also on May 8, that the New Croton is again providing water to the city. The 33-mile-long aqueduct, opened in 1890, is three times larger than the Old Croton and lies further east and deeper underground. Generally providing about 10% of the city's water supply, it can provide up to about a third when the need arises.

The New Croton has been offline since 2008 for rehabilitation work related to the new Croton Filtration Plant. The New Croton brings Croton water to Jerome Park Reservoir - just south of Van Cortlandt Park - from where it previously entered the city's distribution network. Henceforth, water in the reservoir will be diverted via new tunnels upstream to the \$3.2 billion filtration plant, now activated, to undergo treatment, including exposure to ultraviolet light. The filtered water will then be distributed directly from the plant.

The filtration plant was required by federal and state authorities because development in the Croton watershed has negatively affected the quality of the water. After long controversy, it was built under the site of Van Cortlandt Park's Moshulu Golf Course. The Jerome Park Conservancy and neighborhood residents continue to campaign for long-overdue recreational access to the path around the scenic, 94-acre Jerome Park Reservoir. —C. Fahn



Remnants of the two original 36"-diameter pipes, with the large, 90-1/2" pipe - added in the early 1860s - above and between the smaller pipes. The pipes are in an enclosed space beneath the walkway of the High Bridge. Below: the cross-section of this upper part of the bridge shows the layout of the pipes and the modifications to the bridge (arched brick roof of the pipe chamber and raised sidewalls) carried out with the installation of the large pipe. (Diagram reproduced in *Water-Works*, Kevin Bone, ed., New York, Monacelli Press, 2006, p. 62.)



The Temporary Crossing of the Harlem River

Croton water first flowed to Manhattan in 1842. The High Bridge was completed in 1848. This raises the question of how the water was carried across the river in the intervening years. Croton engineers created what they termed an embankment at water level. From the masonry aqueduct atop the mainland side of the river, a 36-inch pipe descended the bluff, crossed the river on this embankment, and ascended partway up the Manhattan slope. (This pipe was later reused as one of two in the completed bridge.)

Through a branch pipe, the pressure created by this deep pipe siphon could be vented at will by engineers to form a jet of water rising as high as 115 feet – a delightful “dancing waters” in the river.

How to Reach the High Bridge

After being closed for some 45 years, the Old Croton Aqueduct's High Bridge, now renovated, is once again open to the public. The High Bridge is administered by the New York City Department of Parks & Recreation. It is accessible to all, including visitors using wheelchairs, bikes, and strollers. Current hours of opening are 7am to 8pm. Following are directions for getting onto the bridge from both the Bronx and Manhattan ends.

Bronx: Entry to the bridge is at street level, from Bronx Highbridge Park, located at W. 170th St. and University Ave. (Martin Luther King, Jr. Blvd.) and nearby streets. The design of this small park features the Old Croton Aqueduct, which lies beneath it. *By subway:* The park is uphill from the 170th St. stop on the no. 4 line; the 170th St. stop on the B/D line is a little further away. *By car:* The park is adjacent to 1381 Martin Luther King, Jr., Blvd. (feature 22 on the Friends' map of the Aqueduct in New York City). *Parking is difficult.*

Manhattan: Entry to the bridge is partway down a hillside in Manhattan's Highbridge Park.

1) At W. 172nd St. and Amsterdam Ave., follow the paved path past a playground to the 98-step stairway next to High Bridge Tower (the tower is closed for repairs). The stairway ends at the entrance to the bridge. The 168th St. stations on the No. 1 and A/C subway lines are in convenient walking distance of Highbridge Park (walk east from the subway exit).

2) Alternative to stairs: from W. 167th St. and Edgecombe Ave., follow the ramp down, cross Sunken Playground at the base of the ramp, and turn left onto the easy, paved path to the bridge, about a half-mile long. For those not using wheeled means, a pleasant alternative is to take the same path from its beginning at W. 165th St. and Edgecombe Ave.; sign says Adventure Playground. There is a very short, slightly steep section where the path starts. Subway information: same as for 1) above.

From Westchester: Take a Metro-North Hudson Line train that stops at Marble Hill. Walk up several flights of stairs to exit the Marble Hill station at W. 225th St. Turn right and walk half a block; then take stairway up to the elevated 225th St. station on the No. 1 subway line, where Metro cards can be purchased. Take the No. 1 train to 168th St. and walk east to Highbridge Park.

For inquiries about Old Croton Aqueduct State Historic Park or to report trail conditions, call Park Manager Steven Oakes at 914-693-5259; mailing address: 15 Walnut Street, Dobbs Ferry, NY 10522.

Thursday Club Backs Keeper's House Project

May 1, 2015, was the best May Day ever for the Friends. Members of the Thursday Club of Irvington, renowned for supporting community projects, have actively worked to improve the world around them for an amazing 92 years, and we were thrilled to be chosen as beneficiaries of the club's annual Dinner Dance and Silent Auction. Our Board of Directors put aside their hiking clothes to dress up for the occasion, with many contributing items for the auction. The auctioneer for this elegant event, Leigh Keno of PBS' Antiques Roadshow, entertained the guests as he encouraged them to outbid one another.

The good news is that the event contributed \$75,000 toward our \$252,300 budget for the interactive displays and exhibits that will make the Keeper's House a destination for the entire area. We are working to raise the necessary \$61,000 to get us over the top and ensure an exciting Grand Opening. We welcome contributions of any size.

A big thank you to all new friends at the Thursday Club. *-Mavis Cain*

MEMBERSHIP COUPON

Your tax-deductible contribution helps to protect and preserve the trail.

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| <input type="checkbox"/> Additional donation to Keeper's House Fund \$_____ | |

Please make check payable to Friends of the Old Croton Aqueduct. Send it with this coupon to the Friends at Keeper's House, 15 Walnut St., Dobbs Ferry, NY 10522-2109.

Name _____

Address _____

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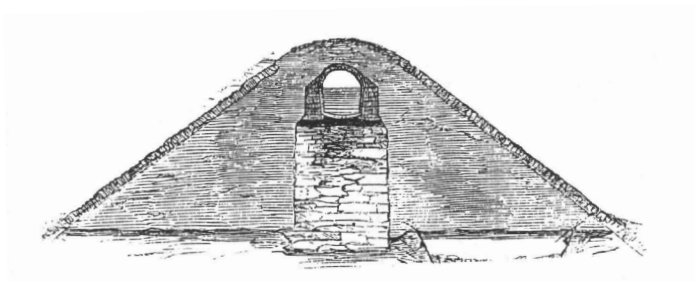
Please let us know if you would like to volunteer:

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|---|--|
| <input type="checkbox"/> Cleanups | <input type="checkbox"/> Vine-cutting |
| <input type="checkbox"/> Computer help | <input type="checkbox"/> Database help |
| <input type="checkbox"/> Events planning | <input type="checkbox"/> Outreach at events |
| <input type="checkbox"/> Blog/website | <input type="checkbox"/> Publicity (all media) |
| <input type="checkbox"/> Graphic design/signage | <input type="checkbox"/> Newsletter articles |
| <input type="checkbox"/> Lead (or assist with) walking tours | |
| <input type="checkbox"/> Outreach on the trail (meet and greet) | |

We need your help.

Friends of the Old Croton Aqueduct
Keeper's House
15 Walnut Street
Dobbs Ferry, NY 10522

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Newsletter: Ruth Gastel, *Editor*. News items, reminiscences, and comments welcome: 914-479-1414 or ruthg@iii.org or by mail c/o the Friends.

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*A new place to play! Skipping rope on the High Bridge.
(Photo by T. Tarnowsky)*

Friends of the Old Croton Aqueduct is a private, non-profit, volunteer organization formed to protect and preserve the Old Croton Aqueduct. The Friends work to raise public awareness of the Aqueduct and trail, and to secure the resources that will enable this historic greenway to remain unspoiled in perpetuity. *Address:* Keeper's House, 15 Walnut St. Dobbs Ferry, NY 10522-2109; *telephone* 914-693-4117, www.aqueduct.org.

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