

Catskill Aqueduct Pilot



As the Catskill Aqueduct celebrates 100 years in service, many DEP employees are working hard on a plan to rehabilitate the cut-and-cover portions of the aqueduct for the first time since it was built.

The project—known as Catskill Aqueduct Repair and Rehabilitation—is currently being designed and will be constructed from 2017-2020. The aqueduct will be shut down for weeks at a time during those years

to allow the work to take place. It will include the replacement of 36 siphon drain valves that are original to the aqueduct, the repair of six leaks, and a careful inspection of most of the aqueduct.

The work will also include the removal of biofilm that has accumulated along portions of the aqueduct spanning about 59 miles of its length. The biofilm is a

(Continued on reverse side)

Spotlight on Safety

Working in Extreme Cold Weather

With winter only two weeks away, extremely cold weather can pose a serious health hazard for outdoor workers. Health risks associated with prolonged exposure to freezing temperatures can include hypothermia and frostbite. Hypothermia sets in when the body's temperature drops to or below 95 degrees Fahrenheit; symptoms can include shivering, slurred speech, numb hands and confusion. Frostbite is damage to the skin and underlying tissue, and symptoms include numbness, loss of feeling and white or blue appearance of the skin. Both are serious and can lead to death. To help protect yourself follow these guidelines:

- be aware of weather forecasts
- work in pairs and monitor other workers' conditions; know the signs and symptoms of cold induced illness
- wear proper clothing for wet and windy conditions, including hats and gloves

If you suspect someone is suffering from any of these conditions, alert a supervisor, call for emergency help and move them into a warm area. For more information go to DEP's "[Exposure to Extreme Heat and Cold](#)" Guidance.

At DEP, everyone is responsible for safety. If you or anyone on your team is concerned about your working conditions, it's okay to ask your supervisor or your bureau's EHS liaison how they can help. If you've still got questions, you can call the EHS Employee Concerns Hotline. It's DEP's responsibility to acknowledge and fix unsafe situations, procedures, and practices. With your help, we'll not only get the job done, we'll make it safer for ourselves, our coworkers, our families, and our city. CALL (800) 897-9677 OR SEND A MESSAGE THROUGH [PIPELINE](#). HELP IS ON THE WAY.

Commissioner's Corner



Since 2011, and for the first time in its history, the world population as a whole is now mainly concentrated in urban centers. In 2025, more than 1 billion people will be living in about 100 very large cities. Megacities, those cities with more than 10 million people, are multiplying rapidly and they face challenges related to water management on a scale all their own, especially in the context of climate change. New York City, with 8.5 million residents, faces similar challenges and last week I had the opportunity to join Deputy Commissioners **Angela Licata** and **Vincent Sapienza** in representing the City and DEP at the United Nations Educational, Scientific and Cultural Organization's International Conference on Water, Megacities and Global Change.

The conference brought together researchers, water service providers for large cities, politicians and representatives of leading civil society organizations, to take stock of current knowledge, share innovative experiences and discuss the variety of approaches for the management and the role of water in existing and emerging megacities.

Deputy Commissioner Licata joined a panel composed of representatives from Paris, Mumbai, Tokyo and Buenos Aires where she provided a history and

profile of New York City's water and wastewater systems. She also discussed our aggressive efforts to integrate green infrastructure into our stormwater management programs.

I, along with officials from France, Mexico, Slovakia, San Francisco and Buenos Aires, convened a panel to take stock of how water utilities in megacities are adapting to climate change. We spoke of the unique challenges facing different cities and how we must tailor our approaches to accommodate and strengthen existing infrastructure and how it fits into the urban landscape.

Finally, Deputy Commissioner Sapienza spoke on an international panel about New York City's preparations for Hurricane Sandy, how the historic storm surge impacted the wastewater treatment system and our ongoing efforts to fortify and strengthen the resiliency of the system.

Most importantly, and similar to our working partnership with Copenhagen, the conference served as a starting point for a new cooperative network amongst the water managers in megacities around the world.

Read more about the NYC Green Infrastructure Program [here](#) and learn about the Wastewater Resiliency Plan [here](#).

Catskill Aqueduct Pilot Continued



harmless bacteria that has grown by consuming the naturally occurring iron and manganese. By creating additional friction along the aqueduct walls, the biofilm has reduced the amount of water the Catskill Aqueduct can deliver each day. By removing the biofilm, engineers believe the Catskill Aqueduct can regain about 40 million gallons per day (MGD) of its historic daily capacity, from its current peak of about 595 MGD to roughly 635 MGD. This extra capacity will help sustain New York City during the approximately 6-month-long Delaware Aqueduct shutdown that's planned for 2022, when workers will connect the new bypass tunnel near the Hudson River. But how will the biofilm be removed from the Catskill Aqueduct? That question was the subject of a week-long pilot test in November, during which engineers entered the aqueduct and tried several methods to clean the tunnel lining.

The Catskill Aqueduct was shut down from Nov. 15-20 so that crews could enter the aqueduct through a hatch in the Town of New Paltz, near the Mohonk Preserve. A visual inspection showed that the biofilm had mostly accumulated on the walls of the aqueduct, not on the invert (floor) or the center of the crown (ceiling). In some places the biofilm was only a thin layer, but elsewhere it measured roughly a half-inch thick. Five methods for removing the biofilm were tested along a 100-foot length of the aqueduct. They included compressed air, vacuuming, brushing, power washing with water, and scraping. Power washing and scraping were found to be the most viable options

for the large-scale work to come. Once the biofilm was scrubbed off, it was sucked up by a vacuum truck for safe disposal.

While they were inside the aqueduct, engineers also used scanning equipment to analyze the structural integrity of the concrete aqueduct walls. The scanning should show any cracks, voids or other imperfections and that data is still being analyzed.

The crew learned other valuable lessons from the pilot test, including the importance of fully planning each worksite. Once the full-scale project begins, the Catskill Aqueduct will be shut down for roughly 10 weeks in the late fall and early winter to coincide with the season of lesser water demand in New York City. Late fall brings cold temperatures, rain, and snow, and each access site will need to be well prepared for the weather.

The pilot also underscored the need for community outreach and notification. Several points of access to the Catskill Aqueduct are near homes or private property. At the site in New Paltz, the work crew needed to be mindful of noise and the impact from light stands, along with traffic control on a busy road to ensure safe passage for workers and heavy equipment. When the full-scale rehabilitation project begins in two years, crews will be working from several sites at the same time and each site will need to be analyzed for its potential impacts on the surrounding area. Project managers said the pilot test yielded helpful results that will help solicit more precise bids for the work and potentially improve cost effectiveness.

Season's Greetings



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Dear DEP Colleagues:

The holiday season is upon us. This time of year offers opportunity for us to focus on what's really important – spending time with friends and family, co-workers, and reflecting on the many accomplishments we enjoy both personally and collectively as a DEP team.

During the month of December, we will be hosting:

THE MOST CREATIVE DEP HOLIDAY TEAM PHOTO CONTEST

To enter the contest you must take a team picture of your bureau's, unit's, or team's holiday celebration. The criteria? Must be (1) Team-based, (2) Festive and (3) Fun!

Please send us your best DEP Team photographs no later than January 4th, 2016 to OrgDev@dep.nyc.gov!

The Top 5 photographs will receive recognition in Pipeline, The Source, and DEPTv!
The best photograph will win a grand prize!

Happy Holidays!



Holiday Toy Drive

Toys are still being accepted for DEP's holiday toy drives in the watershed. Please donate a new, unwrapped toy to help make the holidays a little brighter for children from toddlers to teens. Please [click here](#) for information on where and what is being collected at the watershed sites. Thank you in advance for helping to make the holidays a little more joyful for your neighbors.

December Blood Drive

To help ensure that blood will be available to those who need it, DEP is hosting blood drives at the below locations and times:

Downsville Region Area: Downsville Fire Hall, 12/9, 9:00am to 2:00pm;
Kensico/Highland Regions - Sutton Park Area: Sutton Park-2nd Floor, 12/10, 8:30am to 2:30pm; **Grahamsville Region Area:** Neversink Firehouse, 12/17, 10:00am to 3:00pm. [Click here](#) for more information.

We welcome your feedback! To submit an announcement or suggestion, please email us at: newsletter@dep.nyc.gov.