

Commissioner's Corner



Photo Credit: Edward Reed

On Monday morning, I joined **Mayor Bloomberg**, Deputy Mayor **Cas Holloway**, Chief Operating Officer **Kathryn Garcia**, Deputy Commissioners **Paul Rush** and **Kathryn Mallon**, Water for the Future Program Director **Sean McAndrew**, and BEDC Design Project Manager **Ted Dowey** at a construction site in the town of Newburgh. City officials and local leaders gathered to detonate a blast marking the honorary start of construction on a 2.5-mile-long bypass tunnel around a leaking

portion of the Delaware Aqueduct. Repairing the aqueduct is a central component of DEP's \$1.5 billion Water for the Future program, which aims to ensure clean, safe and reliable drinking water for future generations of New Yorkers. The repair of the aqueduct is also an important part of PlaNYC's goal to improve the reliability and long-term sustainability of New York City's drinking water supply.

The Delaware Aqueduct has been providing more than half of the

approximately 1 billion gallons of drinking water required to meet the City's demands each day. It was constructed between 1939 and 1944 and crosses Ulster, Orange, Dutchess, Putnam, and Westchester counties. It runs as deep as 1,500 feet below ground and varies in diameter from 13.5 to 19.5 feet. In most areas, the aqueduct is lined with reinforced concrete. However, two sections of the tunnel that run through limestone formations were lined with steel to provide additional leak protection for sections cut through the porous rock.

DEP has monitored two leaking sections of the aqueduct since the 1990s using dye, backflow, and hydrostatic tests. Hourly flow monitors provide near real-time data on the location and volume of the leaks. The leaks release 15 to 35 million gallons of water a day, depending on the amount of water the aqueduct is carrying. In 2003 and 2009, DEP also used an Autonomous Underwater Vehicle (AUV)—a self-propelled submarine—to conduct a detailed survey of the 45-mile tunnel between Rondout and West Branch reservoirs. The AUV took 360-degree photographs while gathering sonar, velocity, and pressure data to determine the location, size, and characteristics of the leaks. The AUV is scheduled to launch again in 2014 to update that data. All the data gathered thus far shows the leaks have remained constant and the cracks have not worsened since we began monitoring them in 1992.

In 2010, the City announced a plan to address the leaks by building a bypass tunnel around a portion of the aqueduct in Newburgh, and also grouting closed the smaller leaks in Wawarsing. Site work for this complex project began in

January and construction is expected to continue through the year 2021. The Delaware Aqueduct will stay in service while the bypass tunnel is under construction. Once the bypass tunnel is complete, the existing tunnel will be taken out of service and excavation will begin to connect the bypass tunnel to the existing aqueduct. The project will mark the first time the Delaware Aqueduct will be drained since 1958. Engineers expect it will take roughly eight to 10 months to connect the bypass tunnel.



Photo Credit: Edward Reed

Water for the Future also includes improvements to the structural integrity and carrying capacity of the Catskill Aqueduct, rehabilitation of the Queens Groundwater System to supplement upstate water supplies, and water conservation initiatives in the city. Updates on construction, milestones and other information related to Water for the Future will be posted [here](#). The new website includes details about Water for the Future including, projects, a timeline, and information about how the program will improve and secure the delivery of clean drinking water to 8.4 million residents of New York City and roughly a million residents in Orange, Putnam, Ulster and Westchester counties who also use water from the City's supply.

Spotlight on Safety

2012 EHS Survey Report

DEP recently released the 2012 Environmental, Health and Safety Survey (EHS) Report, which provides useful information on employee perceptions, opinions, and behavior. The data will also help to guide improvements to the EHS programs as we move forward. Some highlights include:

- 80 percent of employees feel safe on the job.
- 91 percent agree that the department is doing a good

job communicating EHS information.

- 85 percent indicate that they receive the necessary training to do their job safely.
- 30 percent completed the survey
- 25 percent indicate they are not aware of DEP's Employee Concerns Program

The report breaks down the survey results for every bureau and office and you can request a hard copy from your EHS Officer or view it [here](#) **2012 EHS Survey**.

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.

Focus on the Field



Structural Engineer **Matt Sorrell** is an avid runner and he completed the New York City Marathon this past Sunday, which he ran in an impressive 3 hours and 40 minutes in order to raise money for the Quinolone Vigilance Foundation. The same traits that help Sorrell excel at long distance running, careful preparation and commitment to an ultimate goal, drew him to DEP and the opportunity to work on one of the largest, most complex, and long-term engineering projects in the region, the Rondout-West Branch Bypass Tunnel (RWBT).

Sorrell grew up in Utica, New York and completed a four-year tour with the Marine Corps before earning an undergraduate degree in civil engineering from Clarkson University. After completing his studies, he joined a private consulting firm where he contributed to numerous DEP projects, including the rehabilitation of the Croton Falls and New Croton Dams.

Since Sorrell joined DEP's Bureau of Engineering, Design and Construction's (BEDC) In-House Design team, he has spent most of his time planning for the RWBT project. He initially worked out of Lefrak headquarters, but since September he has reported to the Wappinger construction site, where he expects to remain through the completion of the project.

The RWBT project is broken into two phases, the first includes the preparatory site work and sinking of two new shafts, which will continue through 2016. The second phase, the mining of the bypass tunnel itself, is expected to be put out for bid next year and construction will continue through 2021. While there is a small army of structural engineers working on the project out of Lefrak, Sorrell's presence in Wappinger gives DEP a set of eyes and ears on site and

helps to facilitate the quick resolution of the inevitable issues that arise during construction.

"The city's drinking water systems rank among the marvels of the modern world and being a part of the work to ensure it remains that way has been everything I hoped it would be," said Sorrell.

There are also two phases to the engineering of the project—structural work during the planning, and design services during construction—and these are the areas that Sorrell focuses on. Whether it's drawing up new plans on-site when the bedrock was found to be slightly lower than anticipated at the Newburgh shaft site, or preparing the design for phase two of the project, the work is a testament to the evolving nature of the project. Another challenge is designing the critical connection work, scheduled for 2021, in a way that it can be completed as quickly as possible.

"Talented engineers like Matt, and our entire in-house design team, are a part of DEP's proud tradition of designing the rock tunnels and shafts that supply drinking water to more than nine million New Yorkers every day," said BEDC Deputy Commissioner **Kathryn Mallon**. "Working in partnership with an incredible construction team and contractor, they are helping to keep this critical project ahead of schedule and under budget."

Sorrell and his wife moved to Cornwall-on-Hudson this past summer, in part to be closer to the work he will be focused on, but also to be closer to New York's great outdoors where he relishes spending his time outside of the office. Fishing, kayaking, and of course running, are some of the ways that he relaxes and he looks forward to competing in another marathon in the future.

Extra Extra - DEP News



For the last four weeks, DEP's Sludge Boat "Red Hook" has been in dry dock at the Brooklyn Navy Yard where a team of 40 painters, welders, electricians, and cleaners have worked up to 14 hours a day to give the vessel a tune-up and new paint job. [Watch Port Engineer Donald Raffaniello](#) give a description of the work and see a time-lapse video of the Red Hook being re-floated.

For those of you reading Weekly Pipeline outside of the office, you can see it [here on YouTube](#).

All Hallows' Eve



On Halloween evening, Superintendent **Jim Pynn** led a unique twilight tour of the Newtown Creek Wastewater Treatment Plant which, once again, proved to be a big hit with New Yorkers. Special thanks go out to the BWT and BPA staff who volunteered their time to make the event a success.

Thanks also to BWS staff, and the Watershed Agricultural Council and Prospect Hill Orchards for their generous donation of apples, pumpkins, gourds, and giveaways.

Oh, What a Relief It Is!



Last week, **Mayor Bloomberg** cut a ribbon at the newly renovated Queens Museum of Art. One of the main installations at the museum is a 540 square foot relief map of the New York City water supply system that is on long term loan from DEP. Originally commissioned in 1938 for the World's Fair, the 27-piece map spent decades in storage before being restored to its original brilliance by McKay Lodge Fine Arts Conservation Lab in Oberlin, Ohio.

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