

Building a Better Water Supply System Is No Pipe Dream

While the phrase Water for the Future may evoke science fiction, it actually describes a DEP project that will secure the reliability of New York City's drinking water supply through repairing some of its most critical infrastructure, while also seeking innovative methods of preventing service interruptions from occurring as an unintended—and unacceptable—side effect. Maintaining the infrastructure responsible for serving more than nine million residents is not easy, and the project represents years of research, planning, and outreach before the commencement of operations.

Responsible for carrying roughly half the city's drinking water to more than eight million people, the Delaware Aqueduct transmits approximately 500 million gallons per



day. The city identified two leaks in the Rondout-West Branch Tunnel section of the aqueduct, one under the Town of Wawarsing in Ulster County and another under the Town of Newburgh in Orange County. To repair these leaks, a new 3-mile tunnel will be built under the Town of Newburgh to bypass the leaking portion while repairs are conducted

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Spotlight on Safety

Recognizing EHS Excellence: Don't Forget the DEP Employee of the Month Award

Employee contribution and recognition for EHS excellence has always been a key component of DEP's EHS Program. "Serious About Safety" and "Eye on the Environment" awards were used to recognize employees for their role in making DEP a safer and better workplace. Rewarding employees for their EHS contributions supports Strategic Plan EHS goals (21-24) of EHS excellence, employee recognition, and open communication.

Now, through the Employee of the Month Program, employees can be recognized for the role they play in fostering an organizational culture that values environmental excellence and workplace safety. Employees whose

extraordinary actions and contributions, large or small, promote a safe workplace, improve EHS operational efficiency, and demonstrate environmental responsibility and stewardship should be nominated for this award. June is National Safety Month and will be dedicated to recognizing employees for significant EHS contributions over the last fiscal year, so start thinking about it now.

Click on the following link [to review nominating criteria for the EHS Recognition/Employee of the Month Award](#). To nominate your co-workers and others who perform EHS or any other work in an outstanding manner, complete the nomination form and submit to hroth@dep.nyc.gov.

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

Combined sewer overflows have bedeviled New York officials for decades. Like many large cities, our combined sewer system can be overwhelmed during significant storms, and when it reaches capacity a mix of storm and wastewater is discharged into surrounding waterways. In recent years, DEP has made substantial progress toward combatting this age-old dilemma: the waters of New York Harbor are now the cleanest they have been in more than 100 years of testing. But we can and must do more, and the NYC Green Infrastructure Plan that we unveiled in 2010 lays out how we intend to move forward. These past few weeks have marked major progress on this front.

A few weeks ago, we issued a Request for Proposals (RFP) to design plans for green infrastructure projects at the Gowanus Canal, Flushing Bay, and Newtown Creek combined sewer areas. With a total value of \$12 million, the three design contracts will evaluate each location and select an approach best suited for each, ranging from bioswales, rain gardens, porous pavement, to blue and green roofs. Council Member **Brad Lander** lent his support to the RFP, saying: "I am enthusiastic about green infrastructure as one important step in our effort to improve water quality in the Gowanus Canal. This is a great opportunity for DEP and community stakeholders to work closely together to implement real sustainable solutions." The New York Daily News picked up on this major initiative.

Today, I joined Deputy Mayor **Cas Holloway**, DEC Commissioner **Joe Martens**, Council Member **Stephen Levin**, Brooklyn Navy Yard CEO and President **Andrew Kimball**, Natural Resources Defense Council Executive Director **Peter Lehner**, and our partners at the League of Conservation Voters, the Trust for Public Land, New York/New Jersey Baykeeper, and Hudson Riverkeeper in announcing a historic consent agreement using green infrastructure to protect New York's waterways. Under the agreement, we will invest roughly \$187 million over the next three years to capture stormwater before it enters the sewer system—part of our overall plan to spend \$1.5 billion by 2030 and cut combined sewer overflows by 40%. Commissioner Martens noted that the NYC



Green Infrastructure Plan will allow for a cost-effective, adaptive management strategy as opposed to costly mandates. And Deputy Mayor Holloway pointed out that the only way to truly get things done is to work together, and this historic announcement was proof positive of that. As we work to capture the first inch of rainfall on 10% of the city's impervious surfaces, this agreement gives us the added benefit of greening our streets and rooftops, cleaning our air, lowering building energy costs, and improving property values—an added annual value of up to \$400 million a year. We made this announcement against the backdrop of stunning views in all directions at the Brooklyn Navy Yard, where Brooklyn Grange will build a vibrant, sprawling rooftop vegetable farm with nearly \$600,000 from our Green Infrastructure Grant Program plus \$300,000 from other sources. Additionally, our work to extend our green infrastructure partnerships to include schools with the Trust for Public Land, the Department of Education and the School Construction Authority by building up to 10 "green playgrounds" with rain barrels and porous pavement was picked up by the Wall Street Journal.

Finally, last Monday I visited the Owl's Head Wastewater Treatment Plant, where plant superintendent **Bill Grandner** gave me a tour of the facility including: the plant's computerized control system, which monitors critical equipment and was recently used to incorporate OpX recommendations; the cogeneration engines that produce electricity from digester gas; the new residuals handling building; the upgraded odor control system on the primary tank weirs; and the new LED lighting installations that will reduce the plant's energy consumption. In treating more than 120 million gallons of wastewater each day and serving more than 758,000 residents, the work of Bill and his staff couldn't be more essential.

Focus on the Field



As a Certified Professional Geologist, **Dan Michaud** brings more than a decade of experience to his job managing part of the Rondout-West Branch Tunnel for the Bureau of Water Supply in Kingston.

Dan enjoys the challenges of this project working alongside senior engineers, geologists and planners. “We are all working together to deliver a highly technical capital improvement project that is vital to the long-term reliability of NYC’s water supply system,” he said.

Most recently, Dan has been participating in a committee of DEP staff tasked with selection of a specialized contractor who will design, construct and operate a Remote Operated

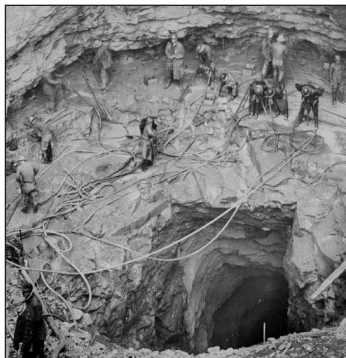
Vehicle (ROV) for an upcoming tunnel inspection. The ROV will be equipped with high definition cameras allowing designers to view cracks that could reveal water movement through the tunnel’s concrete liner. The ROV is a submersible unit that will travel many miles to collect data vital to this project.

This project extends beyond the construction of a replacement tunnel segment; DEP is also working to optimize the Catskill/Croton systems so both can be operating at their fullest potential during the bypass project. There are several other important support projects concerning development of alternate sources of water supply that will serve as back-up to the normal flows.

Previously, Dan managed groundwater environmental remediation and municipal well-field development projects throughout the Hudson Valley. Geology was an early passion that became the subject of his bachelor’s degree at Plattsburgh State and his master’s degree at Binghamton State. On weekends, he spends plenty of time outdoors snow-shoeing, skiing and hiking.

Out of the Archives

Diversion Tunnel Inclined Shaft Portal, Merriman Dam



In 1938, a firm from Massachusetts called B. Perini & Sons, Inc., won the \$2.8 million contract to build the temporary cofferdam (a watertight embankment) and a diversion tunnel, which would control the flow of Rondout Creek during the lengthy construction of the Merriman Dam. The method used for stream control on the Rondout Creek differed from previous strategies that were used on New York City dams. The stream control works for reservoirs such as Ashokan and Schoharie had

been run through the heart of the dam but that wasn’t an option with the earthen Merriman Dam.

Instead, a huge diversion tunnel was cut through the ledge rock entering the hillside to the south and west about 400 feet upstream from the dam. The rough-cut tunnel was 30 feet in diameter and the finished diversion tunnel is 30 feet in diameter, large enough that heavy construction equipment could operate freely within the space. The cofferdam was constructed of earth, rocks, steel-sheet piling and temporarily directed the flow of the creek away from the dam site and into the diversion tunnel. The diversion tunnel would eventually become part of the permanent spillway for the dam, discharging water to the Rondout Creek below. This photograph from 1939 shows the portal of the inclined shaft looking down toward the diversion tunnel with the excavation in progress.

Word of the Week

MIXED LIQUOR: The mixture of return activated sludge and primary effluent in the aeration tank.

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under Wawarsing from within. To connect this bypass tunnel after its construction, the Rondout to West Branch portion of the Delaware Aqueduct will need to be taken offline from the water supply for an extended period of time.

“Obviously, we’re dealing with an extremely critical component of the water supply infrastructure,” said Project Director **Sean McAndrew**. “Millions of New Yorkers rely on the Delaware Aqueduct, and removing that piece for any period of time is an extremely complex process.”

That process involves securing the approval of DEP partners in local towns, while also communicating with state and federal regulators, and taking geological borings to help plan the tunnel construction.

However, as befits a program with a name awash in promise, Water for the Future involves more than simply fixing a leaky aqueduct. Several conservation measures are underway that will help DEP avoid service impacts during the shutdown and connection phases, most notably the effort to more effectively and accurately track water consumption through installation or replacement of meters for high-volume consumers. The conservation effort will partner DEP with both public and private consumers to explore and implement fixture replacements and water re-use options. DEP is also investigating the reactivation of the

former Jamaica Water Supply infrastructure in southeast Queens, a series of groundwater wells that can potentially serve as a supplemental source.

Another project involves work in the Catskill Aqueduct to increase its capacity by 10%. The exploration of supplementary supply during shutdown is even expanding beyond New York’s borders, as conversations are underway with neighboring New Jersey. The Garden State partnership would potentially connect Staten Island with purveyors such as Middlesex Water Company and New Jersey American Water, as well as supplies from the North Jersey District Water Supply Commission. An interconnection with the Western Nassau Groundwater System is also being pursued. Discussions are also underway with DEP’s upstate customers to create ways to take them off the system to allow more water to reach the city during the shutdown.

In other words, Water for the Future seeks to repair infrastructure from yesterday while securing today’s well-being and building a sustainable tomorrow. The program is a multi-faceted effort requiring the many talents of DEP staff across various bureaus and specializations. With the program now fully underway, one thing has become eminently clear: Water for the Future is no pipe dream.

THURSDAY, MARCH 22, IS WORLD WATER DAY: Celebrate by attending the 8th Annual Comedy Night for Clean Water on Thursday, 3/22 at 7:30 pm. (An event of Water for People-NYC with support of NYAWWA). Standup NY Comedy Club, 236 W. 78th St., NYC. Full ticket price goes to WFP to support water and sanitation projects overseas. Line-up of comic talent for this year’s show to be posted soon. For more information, contact: **Dionne Roche, Anne Seeley, Roya Riazzi, Mark Klein, or Susan McCormack**. For information on other events to celebrate World Water Day, please click here [👉](#).

DEP Blood Drive: Lefrak, 3rd Floor Cafeteria; high-rise building: 3/13-3/15, 7:45 am to 1:30 pm; Grahamsville Parking Lot: 3/14 – 3/15, 10:00 am to 3:00 pm. Please click here [👉](#) to see the email from the Commissioner, and here [👉](#) for the list of blood captains.

We welcome your feedback! To submit an announcement or suggestion, please email us at: newsletter@dep.nyc.gov [👉](#)