

Commissioner's Corner



Last week DEP received its sixth shipment of steel liners that will be used to repair the Delaware Aqueduct, the longest tunnel in the world.

The massive liners were shipped by barge from Louisiana, traveling through New York Harbor and up the Hudson River to a port in Newburgh.

The liners are part of a \$1 billion project to fix two leaks within the 85-mile-long Delaware Aqueduct, which conveys about half of New York City's drinking water each day from reservoirs in the Catskill Mountains. The project comprises the largest repair in the 175-year history of New York City's water supply system.

DEP is currently building a bypass tunnel alongside the largest leak in the Delaware Aqueduct. The 2.5-mile bypass will be constructed 600 feet below the Hudson River, between Newburgh and Wappinger. The finished bypass tunnel will be connected to structurally sound portions of the existing Delaware Aqueduct to convey water around the leaking section. The leaking stretch will then be plugged and permanently taken out of service. DEP expects to complete the project in 2023.

Most of the Delaware Aqueduct was drilled through dense bedrock that provided support for the concrete tunnel. The portion underneath the Hudson River, however, was built through cracked and faulted limestone—a geology formation that lacked adequate support for the tunnel. When the aqueduct was built in the 1930s and 1940s, engineers provided structural support for this stretch of the tunnel by lining it with roughly 1,900 linear feet of steel. In the early 1990s, DEP discovered a leak coming from cracks that were located just outside the extent of that steel lining.

The new bypass tunnel will eliminate those leaks and increase the extent of steel lining within the tunnel. Once it is finished, the bypass tunnel will be lined with 9,200 linear feet of steel to ensure its structural support extends beyond the limestone formation that contributed to the leak. Shipments of steel-liner segments began to arrive in Newburgh late in 2016. DEP has received six of 11 total shipments thus far. The 16-foot-diameter liner is comprised of 230 sections. Each segment measures 40 feet long and weighs approximately 80,000 pounds.

DEP expects to begin drilling the bypass tunnel later this year. The steel liners will be set into place once the drilling is completed in 2019. The existing Delaware Aqueduct will stay in service while the bypass tunnel is built. In 2022, the aqueduct will be drained for the first time in 64 years, allowing construction workers to connect the bypass to structurally sound portions of the existing tunnel. At the same time, workers will enter a portion of the aqueduct in Ulster County to repair a second, small area of leakage from inside the tunnel.

I'd like to particularly thank **Sean McAndrew** and his team from the Bureau of Engineering Design and Construction for managing this immense undertaking. Your efforts are ensuring that New York City has a reliable supply of water for future generations.

Spotlight on Safety

Beware of the Silent Killer: Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless and tasteless gas that is extremely dangerous when inhaled. According to the Occupational Safety and Health Administration (OSHA), employees in certain professions such as diesel engine operators, welders, garage mechanics, firefighters, forklift operators, and toll booth/tunnel attendants may have greater exposure to harmful levels of carbon monoxide. CO is usually formed by the incomplete burning of carbon containing fuels, such as gas, coal, oil and wood.

Generally, CO replaces oxygen in the blood and deprives the heart, brain, and other vital organs of oxygen, which can lead to death. Initial symptoms of CO poisoning may include headache, fatigue, dizziness, drowsiness, or nausea.

At high exposures, symptoms may worsen and include vomiting, confusion, and loss of consciousness.

To reduce the risk of CO poisoning:

- install CO monitors with audible alarms and inspect them frequently
- service equipment regularly to ensure their safe operation
- ensure there is adequate ventilation in work areas
- ensure that employees test for oxygen sufficiency before entering into confined spaces where the presence of CO is suspected
- educate employees about the causes and symptoms of CO poisoning

For more information see [OSHA's Guideline](#).

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.



Banding Peregrine Falcons in NYC



DEP research scientist **Christopher Nadareski**, Section Chief of Wildlife Studies for the Bureau of Water Supply, recently scaled the towers of three MTA crossings—the 693-foot tall Verrazano-Narrows Bridge, the 215-foot tall Marine Parkway-Gil Hodges Memorial Bridge, and the 360-foot tall Throgs Neck Bridge—to check on the nesting boxes of peregrine falcons and place identifying bands on the legs of nestlings that hatched this spring. Wildlife experts use these bands to monitor the number of peregrines in the city, track their movements and lifespans, and identify them in case they become sick or injured. As in years past, Nadareski was assisted by Barbara Saunders of the NYS DEC. Some additional nesting sites visited this banding season include the Met Life Building, Riverside Church, NewYork-Presbyterian Hospital/Weill Cornell Medical Center, 55 Water Street, and the David N. Dinkins Municipal Building at 1 Centre Street. Capable of flying up to 200 mph while diving for prey, peregrines are the fastest birds in the world. The peregrine population was near extinction in the 1960s due to the widespread use of the now-banned pesticide DDT. The nesting boxes used by DEP provide the birds a safe place to hatch chicks and protects them from human disturbance. The goal of the program is to one day be able to remove the peregrine falcon from the state's endangered species list.

New Sewers for West Brighton, SI



Construction has recently completed on a [\\$5.5 million sewer project](#) in the Staten Island neighborhood of West Brighton, located on the borough's North Shore. As part of the project, 1,620 linear feet of stormwater sewers and 2,211 linear feet of sanitary sewers were installed along West Raleigh Avenue, Broadway and Harvest Avenue. While the roadway was open to install the sewers, 2,512 linear feet of new water mains were also built to replace old cast iron pipes, improve water distribution in the area and help to ensure a reliable supply of water for the future. Construction also included 21 catch basins to create additional capacity in the neighborhood's drainage system. Funding for the project was provided by DEP while DDC oversaw the construction.

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

Kudos Corner



Congratulations to the three DEP teams that competed in the Operations Challenge statewide competition held earlier this month at the New York Water Environment Association's conference in Rochester, NY. The Jamaica Sludge Hustlers (**Ray Antenucci, Robert Ferland, Anthony Petrone, Yu-Tung Chan and Joe Atkins**) won 1st place overall, securing their victory by notching 1st place finishes in the Process, Safety and Lab events. The Bowery Bay Coyotes (**Chris Reyes, Anthony Quadrino, Dragan Pilovic, Yue Yue Guo, and Eugene Buckley**) placed 4th overall while the Watershed Warriors (**Ken Taylor, Erik Coddington, Eric Albano, Bruce Decker, Matt Burd, Daniel Byrne**) came in a close 5th place. Coordinating the teams' participation were **Howard Robinson, Bill Sedutto, Kevin McCormick, and Joseph Atkins**. By bringing home the top prize, the Jamaica Sludge Hustlers have earned the right to next compete at WEFTEC in the national competition to be held in Chicago in September. Congrats to all involved and best of luck moving forward!

Employee Assistance Program

A note from **Kaitlyn Maceira**, LMHC, CASAC, with the NYC Employee Assistance Program (NYC EAP).

Stress is inevitable and as much as the NYC EAP would like to relieve all of your stress, we can't. But we can help you manage it. Stress is defined, by Richard Lazarus, as a condition or feeling experienced when a person perceives that "demands exceed the personal and social resources the individual is able to mobilize." In short, it's what we feel when we think we've lost control of something in our lives. Stress throws us off balance and it's important to have a stress management plan to get our thoughts, feelings and emotions back in check. Research has shown that deep breathing and other stress management techniques are successful at reducing stress and restoring balance within. There are two important things to remember when identifying the best stress management techniques for you. The first is that there is no "one size fits all" for stress management. What works for one person, may

not work for someone else. It's important to be creative and try different stress management techniques in order to find out what works for you. The second, is to remember that Rome wasn't built in a day (that seems like it would be stressful if it had been), meaning that these stress management techniques may not work right away. Like anything, they need to be practiced. The more you practice, the better you become and the better you become, the easier they are to implement and utilize in a stressful situation. Some common stress management techniques include: exercise, volunteering, meditation, yoga, Tai Chi, deep breathing, visualization, journaling, religious practices and talking to a mental health professional. Try one, try a couple or try them all. See what works for you and use it. For more stress management techniques or for help handling stress, free and confidential support services are available at NYC EAP. Contact us by phone at (212) 306-7660 or email at eap@olr.nyc.gov.