

We Are So Pumped to Transport Wastewater

Wastewater pumping stations are facilities with pumps and instrumentation that give sewage a “push” toward a wastewater treatment plant. In New York City, about 80% of the wastewater flows through sewers entirely by gravity before reaching one of DEP’s 14 treatment plants. Because it’s free, gravity is the preferred mode of transporting wastewater. But topological obstacles, like hills, require us to pump about 20% of the wastewater. The Bureau of Wastewater Treatment operates a network of 96 pumping stations scattered throughout New York City to perform this critical activity. Each pumping station has been designed to handle one of the following types of wastewater: a) sanitary waste, b) storm water, or c) combined sewage, where sanitary wastewater and stormwater runoff are collected in



the same sewer. There are 48 sanitary, 16 storm, and 32 combined pumping stations.

The first city pumping station, Brooklyn’s Gowanus, was built in 1908. The Warnerville Pumping Station in Queens is the newest, starting service in 2010 to convey sewage from a community that had

(Continued on reverse side)

Spotlight on Safety

Distracted Driving

According to the National Highway Traffic Administration, motor vehicle crashes killed nearly 33,000 people with more than an additional 3.5 million suffering serious injuries in 2010. The National Safety Council (NSC) estimates that approximately one-quarter of the motor vehicle crashes involved cell phone use.

The U.S. Department of Transportation (DOT), 38 of 50 states, and local law enforcement agencies are leading the effort to stop texting and cell phone use while driving by only allowing use of hands-free devices. A combination of tough laws, strong enforcement, and ongoing awareness-building aims to combat accidents caused by distracted drivers. New York State prohibits texting and the use of handheld cell phones. One can incur up to \$150 per summons and 2 points on your license.

The NSC, and the DOT are educating and encouraging drivers to stop engaging in ALL non-driving activities on the road. Employees are encouraged to restrict use of mobile phones and other distracting electronic devices altogether. If you think you may need to make or take a call while driving to a work location, you should set up and test your hands free systems before driving. If possible, make calls before you get in your vehicle. Studies demonstrate that even when drivers use their hands-free devices, their attention is split between the road and the phone conversation. Texting presents a greater hazard because it requires you to take your eyes off the road for seconds at a time! Remember—“one text or call could wreck it all.”

For additional information visit: Distraction.gov, the Department of Transportation, and the National Safety Council websites.

Commissioner’s Corner

At DEP, we understand that economic times are tough, and it is incumbent upon us to keep water rates as low as possible while meeting our responsibilities to provide water for more than nine million New Yorkers. As we conducted hearings on the proposed Fiscal Year 2013 water rate in each of the five boroughs last week, we listened to the concerns of working families and elected officials over the proposed 7% rate increase—and also offered information on the relative costs of water in New York City, Automated Meter Readers, and how customers can keep costs down or reconcile any billing disputes. For example, Deputy Commissioner **Joe Singleton** was on hand to speak with individual customers about their billing issues, and recommended that all customers sign up for My DEP Account online so that they can track their consumption and receive early warnings of costly leaks by signing up for our Leak Notification Program. By working together we can ensure customers’ confidence that their bills are fair and accurate, and that any concerns are promptly addressed. Unfunded federal mandates are the primary drivers of water rate increases and we heard a lot of feedback from communities on the need for cost-effective, sustainable solutions, such as our Green Infrastructure Plan, as well as mandate relief. For example, one resident suggested that we leverage competitive bidding for capital construction contracts, ensuring that the city secures the most cost-effective bids for needed investments. This has become standard protocol for DEP’s capital projects, and it’s good to know that many of our constituents were thinking along the same lines. The concerns of all New Yorkers will be taken into consideration by the New York City Water Board before making a final determination, and DEP appreciates that residents and elected officials made the effort to come out and make their voices heard.

Working with partners helps defray the costs of necessary investments in the water system. Last week, DEP announced an agreement with the National Weather Service that will speed up the development of a state-of-the-art flooding forecasting tool for the watershed.



Called the Hydrologic Ensemble Forecast Service, this new system will provide cutting-edge forecasting data to the Operations Support Tool, DEP’s monitoring and modeling system that allows water supply operators to more accurately predict water storage levels in the city’s reservoirs. Using OST, we can better manage movement of water throughout the reservoir system, and ultimately, to the nine million New Yorkers who rely on the city’s drinking water every day, and can help mitigate the effects of wet and dry weather.

On Tuesday, I kicked off the 25th Annual Operations Challenge competition, a test of skill and speed for teams of wastewater treatment workers competing for the chance to represent DEP at the State competition later this year. Held at the Owls Head Wastewater Treatment Plant, each team was required to fix a pipe, repair a pump, perform a water quality test, and rescue an injured employee. This year’s five competing teams—the Sludge Fellas, Warriors, Sludge Hustlers, Avengers, and Harlem Pump Trotters—hail from the Owls Head, Coney Island, Jamaica, and North River wastewater treatment plants. The teams finishing in the top three will compete in Wastewater Treatment Jeopardy tonight to determine who will represent DEP at the state competition. I’m proud to announce that those teams were: The North River Harlem Pump Trotters, the Jamaica Sludge Hustlers, and the Coney Island Warriors. Please join me in congratulating **Justin Manfredi, Michael Leone, Joe Riccardi, David Taylor, Ettore Antenucci, Robert Ferland, Marra Salomon, Mohammad Rhiman, Ed Schultz, Dan Loffredo, Mike Albright, Stan Zaretsky, and Greg Hewitt.**

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



Mike McGregor joined DEP in 1986 as a Sewage Treatment Worker at the Jamaica Wastewater Treatment Plant. Mike worked his way up through the ranks while working at various wastewater facilities, including the Bowers Bay plant, and Tallman Island and North River collections. Today, he is the Chief of Collections Facilities North for BWT. Although his responsibilities have nothing to do with water bills, Mike does oversee an equally important part of DEP: a complex system of wastewater pumping stations, intercepting sewers, regulator chambers, combined sewer overflow reten-

tion facilities, and tide gates. With the simple mission of making sure the flow gets to each wastewater treatment plant, Mike's responsibilities are among the most important in the city.

The Collections unit is responsible for day-to-day operations and maintenance, as well as emergency responses. During the North River fire, Mike and his team helped provide chlorination at CSO outfalls, and also diverted some flow to the Wards Island plant using large diesel-hydraulic pumps. The accident reminded all New Yorkers of how this process relies on a complex system of pipes and pumps to keep wastewater moving.

In recent years, new Vactor trucks have helped Mike and his team make the existing system more efficient. By ensuring that our large interceptors are clean, less combined sewage is released during heavy rainstorms. Mike describes these new tools simply as "very effective." When he does get a chance to get away, Mike enjoys jet skiing and other outdoor sports.

Beyond New York



A miner climbs on excavated rocks after a giant drill machine broke through at the construction site of the world's longest train tunnel. The NEAT Gotthard Base Tunnel, which crosses beneath the Alps, should become operational at the end of 2016. The project consists of two parallel single track tunnels, each a length of 57 kilometers (35.4 miles) long.

The world's longest continuous underground tunnel, however, is the Delaware Aqueduct at 85 miles (137km) long and 13.5 feet (4.1 m) wide.

The aqueduct was constructed between 1939 and 1945, and carries approximately half of New York City's more than 1 billion gallons of water per day. It takes water from the Rondout Reservoir, the West Branch Reservoir, and the Kensico Reservoir, ending at the Hillview Reservoir in Yonkers, New York

Kodak Moment



Photo Credit: Don Riepe - American Littoral Society

HAULING KEEL: More than 300 people participated in an Earth Day Restoration Cleanup on April 22 at Floyd Bennett Field, co-sponsored by DEP and the American Littoral Society. Volunteers removed more than 10,000 pounds of floatable debris from the shorelines and marshes of Jamaica Bay, including heavy timbers, tires, plastic bottles and old boats, such as the one shown above. Additionally, 500 wetland and 50 upland plants were also installed that day. The next major cleanup is scheduled for International Coastal Cleanup Day on September 15th.

(We Are So Pumped to Transport Wastewater... continued)

been discharging directly into Jamaica Bay. Despite the age difference of the pumping stations, their basic configuration has remained relatively unchanged. Wastewater enters a pump station by gravity, where it is fed into and stored in an underground pit, commonly known as a wet well. One or more pumps at a station will push the wastewater through a pressurized pipe known as a force main, until the wastewater reaches a high enough elevation in the sewer system to again flow by gravity. Force mains vary in length, diameter, and the amount flowing through them. The shortest force main is at the Triboro Bridge Pumping Station in Queens, which is only 26 feet in length, while the force main at the Victory Boulevard Pumping Station is 500 times as long at 13,970 feet. In some instances, pumping is done in steps, with one station piggy backing another. An example is in the hilly Riverdale section of the Bronx, where sewage gets transported by four pump stations that are linked together in a sequence, consecutively pushing flow towards the Wards Island plant.

In the early days of pumping stations, manual operation was required. Today, all but one of the stations use automated systems to start and stop pumps. The Avenue V Pumping Station in Brooklyn, which was built in 1915 and was operated manually for 95 years, is now being upgraded to get automatic controls. Only one station has a full-time staff, due to its enormous size: the Manhattan Pumping Station at Avenue D can pump 400 million gallons per day to the Newtown Creek plant.

Overseeing the pumping stations operations and maintenance are Chief of Collections Facilities South **Chris Laudando**, and Chief of Collections Facilities North **Michael McGregor**. DEP remotely monitors the pumping stations with a supervisory control and data acquisition system, or SCADA, which relays information on key parameters such as flow, power, and wet-well levels. SCADA also has an alarm system and other early detection capabilities that get activated in an emergency. The SCADA system is monitored around the clock by a BWT engineer. The system has helped significantly reduce pumping station outages over the past few years.

In addition to the pumping stations, BWT manages four facilities that collect and retain combined sewage during storms. During heavy rainfalls, the capacity of the wastewater treatment plants and pumping stations can be exceeded, resulting in untreated discharges called Combined Sewer Overflows, or CSOs. To reduce these discharges, DEP constructed CSO Retention Facilities at Spring Creek, Flushing Bay, Paerdegat Basin and Alley Creek. After a storm subsides, the sewage collected at these facilities is pumped to a wastewater treatment plant. The Paerdegat Basin facility can store up to 50 million gallons of CSOs during storms, and the Flushing Bay facility can store 43 million gallons. In conjunction with DEP's Green Infrastructure initiative, the CSO retention facilities and pumping stations play a vital role in improving the quality of our waterways.

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