NYC Environmental Protection
Michael R. Bloomberg, Mayor
Carter Strickland, Commissioner

WEEKLY PIPELINE

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DEP's Tunnel Vision: Safe, Safe, Safe

DEP water supply tunnels are the main arteries that keep New York City running, delivering the precious commodity that powers its industry and its people. But as every sandhog knows, tunneling is dangerous work and tunneling in the past without 21st century tools or technology could be even more perilous.

In 1905 the Board of Water Supply was mandated by the State of New York to provide a pure, wholesome and adequate supply of water for New York City. Two busy years were spent acquiring the necessary approvals, surveying land, taking geological borings, and designing the specifications for the works. Construction of the Catskill system began in 1907 and by 1909 there were 10,000 people at work per day, with an estimated 15,000 living in the job area. The Board understood the importance of keeping the workers and the surrounding communities healthy and safe.

Realizing the magnitude of the task, the Board hired a Sanitary

(Continued on reverse side)

Spotlight on Safety

EHS Metrics

Every month, the Office of Environmental, Health and Safety (OEHS) collects and analyzes safety data that is submitted by all bureaus to the Office of Strategic Planning (OSP). Through careful analysis of the data and preparation and dissemination of quarterly management reports, high quality safety data is turned into actionable information and is the basis for continuous improvement. The Assistant Commissioner of OEHS evaluates the data and provides feedback and guidance to EHS Directors and bureau management.

What type of data is being collected? Injuries (by injury severity), numbers of citations and violations, environmental permit exceedances, sewage spills, releases (i.e. chemical and petroleum spills), motor vehicle accidents and contractor injuries are just a few of the performance indicators used to monitor progress and verify the effectiveness of DEP's EHS policies and programs. Utility bureaus also provide the same EHS data to OSP for further analysis down to the level of borough, division or facility for "H2OStat."

Future Spotlight on Safety articles will look in more detail at some of these performance indicators, statistical trends, and other items of interest related to EHS metrics.

For more information about EHS Metrics, click here

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

The aftermath of Hurricane Irene and Tropical Storm Lee is still being felt by upstate New York—some estimates put the damage at more than $1 billion. Roads and other vital infrastructure need repair; homes need to be rebuilt; and businesses need assistance getting back on their feet. Why should we get involved? Homeowners, businesses, farms and local government in the area are stewards of our watershed; we rely on them to employ best practices to keep our water quality high and prevent contaminants from entering our unfiltered drinking water supply. We believe that economically viable communities are fully compatible with our water quality protection goals. So helping them out is not only the right thing to do, it also is in New York City's interest in avoiding constructing an enormous filtration plant. In addition to providing equipment, personnel and material assistance during and after the storms, DEP last week announced two initiatives to further lend a helping hand. First, DEP provided $300,000 towards the repair of the Schoharie County's emergency siren system for Gilboa Dam, with money anticipated to be reimbursed by FEMA. Though DEP does not own or operate the system, we helped finance its initial construction and we want it repaired as soon as possible to ensure the safety of our workers and downstream residents. Second, we committed $1 million to the Catskill Watershed Corporation, which has set up a flood relief program for local businesses. That money will help with businesses that have water damage to their property recover and get back to work. If you are looking to lend your support, the Catskill Watershed Corporation is accepting private donations to assist with storm recovery efforts. Individuals interested in contributing can contact them at (845) 586-1400. It is truly a worthy cause.

Also last week, DEP published our new enhanced stormwater rule—a major component of our NYC Green Infrastructure Plan. Once the rule goes into effect, new construction will be required to control more stormwater flow on-site, helping reduce street flooding and combined sewer overflows. Property owners will be able to achieve lower flow rates, about 10% of current limits, by installing blue roofs, green roofs, or subsurface gravel beds and stormwater chambers. This rule will only apply to new developments and redevelopments, meaning no existing homes will be affected by the new rule. There is now a public comment period on the rule, including a public hearing on October 31. Combined with our plan to invest significant resources to add green infrastructure elements to public projects, we estimate that this will reduce combined sewer overflows by 1.5 billion gallons annually in 20 years.

New York City is not alone in adopting the use of green infrastructure as a more sustainable and environmentally-friendly way to reduce combined sewer overflows. Today, I returned from the Urban Water Sustainability Leadership Conference, hosted by the Clean Water America Alliance in Milwaukee, Wisconsin. In addition to keynote addresses from Milwaukee Mayor **Tom Barrett** and U.S. EPA Acting Assistant Administrator for Water **Nancy Stoner,** I spoke on a panel about opportunities to rethink how municipalities handle stormwater with directors of water utilities from cities such as Philadelphia, San Francisco, Washington D.C., Portland and Milwaukee. To further speed up this new strategy, I urged my colleagues and the EPA to advance meaningful reforms to account for the complex challenges of urban environments and the most efficient means to achieve our share goals of cleaner water. It is encouraging that the EPA responded to the requests by DEP and other municipalities to review combined sewer overflow policy as part of the regulatory reform effort under President **Obama's** Executive Order, and I look forward to working with our regulators on those efforts in the coming months.

Focus on the Field

Neil Feldscher is the Chief of Environmental Health & Safety (EHS) Compliance for the EHS Compliance Department of the Bureau of Engineering, Design and Construction (BEDC). Neil spends most of his time reviewing and resolving EHS issues that affect DEP employees, contractors and project sites. Because the safety and health of contractors and employees are of paramount importance to DEP, Neil's duties are vital in achieving the successful completion of projects reflected in DEP's $12.5 billion capital program.

During his three years at DEP, Neil has developed EHS guidelines and procedures for many aspects impacting projects managed by BEDC. "We have developed an educational program that includes webinars and classes online, and we do a lot of presentations with consultants, contractors, and trade associations and at job sites to inform people about the importance of safety and health issues," he said. His responsibilities include managing EHS procedures and practices for more than 220 contracts for more than 100 work sites throughout the state. "We have seen a gradual decrease in EHS related injuries and we are below the national average in injuries and accidents. That's a big gain, but our goal is to be the safest capital program in the country," said Neil. To that end, Neil and his staff are currently working on developing an ISO-compliant EHS Management System, raising BEDC EHS programs to levels typical of the top performing companies in private industry.

This position brings challenges every day. Recently, Neil served as the incident response safety coordinator for the fire emergency at the North River Wastewater Treatment Plant. He spent several weeks making sure the safety of every person at this location was in compliance with the EHS standards for NYC.

Neil is a lawyer by training with a vast experience in EHS issues in New York and New Jersey. In his free time, Neil enjoys life with his girlfriend **Sara** and his recently acquired bulldog **Percy.**

Ask Carter

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Q. Where does the name 26th Ward come from and why was a wastewater treatment plant named for it?

A. New York City used to have political designations called wards, which were the smallest political units in NYC. Each ward elected an alderman and an assistant alderman. According to The Encyclopedia Of New York City (1995, Yale University Press) that system goes all the way back to 1686, when Governor Thomas Dongan divided the city, then entirely in Manhattan, into six wards. In 1791, wards were given numerical designations. Brooklyn was later divided into wards, when it became a city in 1837. When Greater New York was consolidated in 1898, numbers were assigned to 32 different wards throughout the five boroughs. So the wastewater treatment plant that was built in the 1890s at Flatlands Avenue in Brooklyn was named after the ward it was situated in. The original 26th Ward plant cost $250,000 to construct, treated 1.2 million gallons per day, and served a drainage area covering 3,200 acres with 65 miles of sewers.

Events

Water for People : Social / Fundraiser: Friday, 10/7, 6-10 pm; proceeds support WFP. For information, contact: dionner@dep.nyc.gov.

(DEP's Tunnel Vision: Safe, Safe, Safe… continued)

Expert Engineer in 1909 that had responsibility for supervising all sanitary matters. Initially the primary goal was to build appropriate facilities such as hospitals, dormitories, and wash houses. In addition there were "sanitary works" to treat all liquid wastes and a laboratory to test water, milk, food and sewage. While the main focus was preventing communicable diseases and protecting the watershed, hospitals were also well-equipped to deal with inevitable construction accidents. Despite these precautions, the Catskill system was a dangerous place to be employed, with 377 deaths between 1910 and 1914.

When construction started on the Delaware water supply system twenty-five years later, contractors no longer provided housing and sanitary regulations were less of a concern. However, over the next 28 years the Board constructed 189 miles of tunnel and there were plenty of hazards to contend with such as falling rocks, gas explosions and dynamite malfunctions. There were also fingers caught in drills, workers feet crushed by train cars and objects falling from shafts, as in 1949 when workers at the top of a shaft dropped a 600 pound steel rail 900 feet to where a crew was mucking below. Miraculously no one was hurt, but in many cases the workers were not so lucky.

Shaft construction and tunneling at the depths encountered in construction of the Delaware Aqueduct were particularly hazardous. In addition to the immediate dangers described above there were also the threat of silica dust and poisonous fumes. Despite the inherently dangerous environment, accidents were greatly reduced through careful planning and training. During Delaware Aqueduct construction there were 15 full time safety engineers: 12 employed by contractors and three by the Board. Contractors maintained clinics at each shaft site with a nurse on duty and a physician on call at all times, with ambulance service and hospital treatment available when necessary. As with the Catskill construction, decompression sickness (also known as the bends) was a constant threat when working under pressure. During the sinking of the caissons a medical lock was provided with a physician experienced in compressed air work. Workers even

wore badges with instructions to take them to the medical lock rather than a hospital if they collapsed on the street.

The Board continued to promote a culture of safety and in 1951 implemented the city-wide Accident Control Program, an initiative of the NYC Division of Analysis that encouraged a proactive approach to accident prevention. The program didn't just involve Board personnel; insurance company representatives were dedicated to the Board full-time and contractors employed safety supervisors. One innovative contractor working on the West Delaware Tunnel instituted a monthly bonus of $200 to the crew with the best safety record. In addition, inspectors from the State Labor Department and US Bureau of Mines visited work sites monthly and contributed to the safety program.

The Board's vigilance was recognized when it was awarded first prize in the Accident Control Program's 1952 annual safety contest for having the greatest reduction in accidents. While one would expect the increased use of machinery, dynamite, and greater speeds to result in more injury, in thirty years of Delaware construction there were a total of 98 deaths, while during the Catskill construction there were 98 deaths in 1911 alone. Catskill pressure tunnel operations resulted in a frequency rate (number of deaths per million man hours of work) of 3.2, while the Delaware Aqueduct frequency rate was 1.6. Put another way, compared to the other pressure tunnels built previously by the Board, the Delaware Aqueduct reduced accidents by 63% per tunnel mile and fatalities by 77% per mile, quite an impressive feat!

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