NYC Environmental Protection

Michael R. Bloomberg, Mayor
Carter Strickland, Commissioner

WEEKLY PIPELINE

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Ex-'Stream' Management Helps Restore Shokan Region

As this year's hurricane season draws to a close, watershed communities are still working to recover from last year's rampant flooding. Hurricane Irene and Tropical Storm Lee dumped nearly 20 inches, devastating many areas. The United States Geological Survey (USGS) recently released their analysis of the magnitude of Hurricane Irene, concluding that the storm was between a "500 and 1,000 year flood event" in the Schoharie Watershed. To put the storm into perspective with past flood events, the Schoharie Creek which runs through the Village of Prattsville received more than twice the storm runoff as the next highest flood event on record.

In addition to destroying millions in property value and threatening the lives and livelihoods of thousands of residents, extensive flooding damages the natural environment. When faced with elevated levels of runoff, streams can over-widen and deepen from the force and quantity and of water running through. This can exacerbate future erosion and flood hazard risks. It can also lead to

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Spotlight on Safety

Hantavirus

Hantavirus is carried by rodents (deer mice in particular) which shed the virus into their environment through urine, feces, saliva, and dander. Humans can become infected when by inhaling these particles, especially in poorly ventilated areas. Person-to-person transmission does not occur. Hantavirus occurs primarily in rural areas within buildings where mice may nest, (i.e. barns or storage sheds). Early symptoms include chills, fever, and muscle aches, then progress to include dry cough, general ill feeling, nausea, vomiting, and shortness of breath.

For employees who may work or perform clean-up activities in high risk areas/buildings, consult with your EHS staff or safety officer. Preventive measures may include:

- Taking steps to control rodent entry and nesting activities inside barns, garages and sheds.
- Keeping the areas clean, uncluttered, and free from garbage.
- Ventilating any high risk area before performing work tasks.
- Wetting the area when cleaning where mice and rodents have likely been nesting.
- Wearing protective clothing and gloves, and donning an N-95 dust mask (under DEP voluntary policy) when performing cleaning tasks in high risk areas.

Visit nyc.gov/doh/hantavirus for more information.

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

With the launch of the NYC Green Infrastructure Plan in 2010, DEP made a groundbreaking commitment to improving the way New York City manages stormwater. By supplementing and even replacing traditional "gray" installation projects such as tanks and tunnels with adaptive green strategies, the plan stands as just one of the many comprehensive approaches we have taken in recent years to continually improve DEP operations and to search for cost-effective solutions. In just two years, we are well on our way toward meeting our first goal of managing stormwater on 1.5% of impervious surfaces in combined sewer areas by 2015.

Our program was on display at last week's White House Conference on Green Infrastructure, a gathering of environmental, sustainability, and public health experts to explore the wide range of benefits of green infrastructure as well as the barriers that many cities confront in its implementation. Led by EPA and the White House Office of Intergovernmental Affairs, the conference demonstrated how federal regulators have responded to municipal concerns about the high cost of meeting water quality goals. Deputy Mayor **Cas Holloway** and I have described these concerns in an article in the September-October Forum published by the Environmental Law Institute. The EPA has incorporated green infrastructure practices into some CSO consent decrees; just last March, DEP signed its own modified agreement with DEC to solidify New York City's commitment to green infrastructure. Already, our waterways are the cleanest they have been in more than 100 years of testing—but as the NYC Green Infrastructure Plan demonstrates, we must continually look for ways to improve.

DEP is also evolving in thoughtful and innovative ways to contend with new weather patterns. After record rainfall in 2011 with events such as Hurricane Irene and Tropical Storm Lee, it's become more important than ever that we understand the connection between water quality and heavy rainstorms. Today we announced a new scientific collaboration with Harvard School of Public Health to study turbidity in our water supply, and help us improve water quality forecasting data. In providing one billion gallons of drinking water every day, the quality of our water supply is of the upmost priority—and this research will help us adapt to the challenges of a continually changing climate.

Just as our partnership with Harvard School of Public Health will improve our predictive modeling in the watershed, our incorporation of Geographic Information System (GIS) technology here in the city will enhance our ability to maintain the 7,400 miles of sewer lines in the five boroughs. New technology helps us make smart investments, and yesterday we announced a pilot program installing sensors on 21 manhole covers that will alert us to elevated flow levels in sewer pipes. These sensors will send alerts to DEP borough command centers when wastewater flows become elevated. To test the effectiveness of this technology, we are piloting 11 installations in Queens, five in Brooklyn, and five in Staten Island. Elevated flows can indicate that a sewer line is backed up, and backups can cause sewers to be overwhelmed during heavy rain. Operating the water and wastewater system of New York City is certainly no easy task. Whether through collaborative partnerships with regulatory agencies and world class research facilities or cutting edge tools and technologies, DEP continues to improve and innovate at every turn.

Focus on the Field

Just like Scotland Yard counts on Sherlock Holmes to solve crimes, DEP relies on a crew of inspectors to investigate and correct improper connections to sewer lines and trace the source of unusual or illegal discharges. One such inspector is **Ru Zhao**, a Shoreline Survey investigator in the Compliance Monitoring section of the Bureau of Wastewater Treatment. For more than nine years, Zhao has helped identify many cases where plumbers improperly connected sanitary wastewater pipes to storm sewer lines. He also works to identify the source of unusual discharges into New York's waterways.

Like any sleuth, Zhao relies on a number of tools to help identify illegal storm sewer connections. One such tool is dye testing, a technique that involves flushing non-toxic green or red colored dye into a building's plumbing system, usually through the toilet or sink. A team of inspectors then observes storm sewer and sanitary sewer manholes for the presence of dye. Typically, there are two inspectors, each with a two-way radio or cell phone. The inspector inside the building ("the insider") drops dye into a plumbing fixture and runs enough water to move the dye to the sewer system. The insider alerts the outside inspector ("the outsider"), that the dye has been dropped. The outsider watches for the dye in the storm sewer and sanitary sewer, recording the presence or absence of the dye. If a problem with the connection is detected, Zhao issues a Commissioner's Order to ensure that the property owner fixes the problem and complies with the law.

In addition to inspecting illegal sewer connections, Zhao also conducts outfall and manhole surveys. To date, Zhao's section has identified nearly 4,200 outfalls—pipes that discharge along New York City's 600 mile-shoreline. As he notes, "If I see that there is flow in a storm sewer outfall during dry weather, it could be an illegal discharge." If an unusual discharge is detected, it is Zhao's job to trace the flow upstream and find the source.

Zhao also collects samples from the city's coastline at 80 monitoring stations every three months to get an indication of possible unseen illegal raw sewage discharges.

In his spare time, Zhao enjoys—you guessed it—reading mysteries, listening to jazz, and playing basketball.

Kodak Moment

New Shaft Cap being delivered for Shaft Rehabilitation Project, Manhattan, NY (9/13/12)

(Ex-'Stream' Management Helps Restore Shokan Region… continued)

a degradation of the stream ecosystem, rendering it inhospitable to a variety of plants and animals that had previously lived there and more susceptible to invasive species. These ecosystems serve an important water quality function, helping filter pollutants out of the water before reaching a reservoir.

Since Hurricane Irene, the Bureau of Water Supply's Stream Management Program has worked with its partners at the County Soil and Water Conservation Districts in the Schoharie, Pepacton, Delaware, Neversink/Rondout, and Ashokan watersheds to restore affected streams and floodplains. The Stream Management Program teams provide professional design, engineering, and construction services to ensure that streams and floodplains are restored to naturally stable forms.

"Stream restoration projects are a core element of what we do," says **Beth Reichheld**, Program Manager of the unit. "They often address long stretches of stream that have been destabilized by human or natural intervention. Our restoration projects reconnect a stream to its floodplain, reduce erosive forces, and protect infrastructure like roads, bridges, property, and adjacent eroding banks that cause turbidity in the water supply."

Following Irene, in order to aid recovery, the Stream Management Program teams committed $3.5 million to secure an additional $9.3 million from the federal Emergency Watershed Protection Program. These funds are being used to design and construct more than 30 emergency watershed projects over the following year. These projects will reduce future flood risk to culverts and bridges, reconnect streams to their floodplains, and stabilize streambanks adjacent to roadways and improve property.

One such project is the Stony Clove Creek in Chichester, a hamlet of Shandaken in the Ashokan Reservoir watershed. A 2003 Stream Management Plan identified a one-kilometer section of stream in Chichester as one of the most significant sources of turbidity in the watershed. Since that time, DEP has worked with Ulster County's Cooperative Extension and Soil and Water Conservation District to form the Ashokan Watershed Stream Management Program. The Chichester portion of Stony Clove Creek is the highest priority stream restoration goal for the Ashokan Watershed.

In 2011, DEP and the Ulster County Soil and Water Conservation District completed extensive design efforts to begin a multi-year restoration of this stream. Tropical Storm Irene delayed construction of the first section until the summer of 2012. The first phase of construction was completed in August 2012 for approximately $950,000. The federal government is covering close to 60% of the total cost as part of the Emergency Watershed Program allocation following Irene's floods. DEP expects to complete the remaining plans to restore sections of the Stony Clove Creek in 2013.

DEP SEPTEMBER BLOOD DRIVE: **Grahamsville**: 9/26 from 10:00 am to 3:00 pm at the Grahamsville Parking Lot. Please click to see the email from the Commissioner and for the list of blood drive captains.

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