

## Holy Moses! How Great Lawn Went From H2O to RBI



It's spring time and that means it's time to play ball. For New Yorkers, one of the most popular destinations for baseball and softball is the Great Lawn in Central Park. And it's no wonder. In addition to its nine ball fields the Great Lawn is a veritable oasis of green grass surrounded by trees and breathtaking views. Lost to memory and all but erased from the landscape, few park visitors know that the Great Lawn was originally the site of a vast 150 million gallon reservoir that received and stored drinking water for the growing and increasingly thirsty city. Simply known as the Receiving Reservoir, the 31-acre body

of water was an integral part of New York City's first publicly-owned and operated drinking water system, supplied by what is now known as the Old Croton Aqueduct.

The Receiving Reservoir occupied precisely seven blocks between 79th and 86th Streets and between 6th and 7th Avenues. At the time of its construction there was no Central Park and the city's population was concentrated below 14th Street. The reservoir was built to ensure a water supply close to the city in the event that the aqueduct supply was interrupted for inspections and repairs. It

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## Spotlight on Safety

### LEDs


LEDs are "light emitting diodes" and release energy in the form of photons (visible light). Although primarily used in electronic devices such as indicator lights, the technology has advanced and become less expensive so they can now be considered efficient alternatives to fluorescent and incandescent bulbs. LEDs also cost a fraction of what incandescent or fluorescent bulbs cost to operate.

LED lamps that are manufactured for general use pose no significant eye health hazards. Some specialized LEDs manufactured in the high intensity blue light range, however, may pose photo-biological hazards and are capable of damaging retinal cells. LED hazards are mostly of


concern to workers that are involved in their manufacture or installation, where they are apt to look directly at the light. A new standard is currently in use to assess the safety of different types of LEDs.

In addition to their great efficiency, LEDs contain no mercury or PCBs. Their long life and small size result in the generation of less solid waste and could potentially reduce DEP's generation of hazardous and universal waste. DEP's Facilities Management and Construction group (FMC) is investigating the feasibility of using LED lighting in certain applications at DEP. OEHS will work with them to ensure that employee health and safety risks, and disposal requirements are well understood.

## Commissioner's Corner


As the largest water utility in the nation even day-to-day duties are anything but routine, as exemplified two weeks ago when BPS officers discovered a potential oil spill in Pepacton Reservoir while performing a regularly-scheduled marine patrol. Our emergency responders were dispatched immediately to isolate the area with booms and to take samples of the material. DEP determined that the spill posed no threat to water quality or to public health. Last week a team of contract divers—necessary because the reservoir is more than 120 feet deep at that location—identified a 4-inch pipe protruding through sediment on the reservoir floor as the source of the leak. The pipe had several small holes that were seeping oil into the water. We constructed a temporary metallic drum with a fitted valve and plug to capture the leaking liquid. DEP is continuing to monitor this temporary containment system to verify that the system is secure on a daily basis. On the day of the first dive, I joined Deputy Commissioner for Water Supply **Paul Rush** and BWS Spill Coordinator **Gregg Costa** to observe the leak and our containment system. Thanks to the daily diligence of our staff, we were able to quickly and responsibly identify, secure, and correct the leak before it grew into a larger problem. 


At Downsville, Paul and I were joined by Assistant Commissioner **Dave Warne**, and **Fred Huneke** and **Craig Cashman** of the Watershed Agricultural Council (WAC). Under contract to DEP, WAC works with watershed farmers to prevent polluted runoff from entering the reservoirs through tributary streams. WAC's efforts have been very effective, with nearly all large watershed farms signing on to the voluntary program.

Last Friday, DEP participated in the 2012 Annual Waterfront Conference hosted by the Metropolitan Waterfront Alliance, a consortium of more than 600 maritime businesses, environmental, and community organizations that advocates for transforming New York Harbor through both environmental and economic incentives.  The conference was held at Chelsea Piers in Manhattan, and I helped moderate a panel discussion on the important role that stormwater management plays in improving water quality. In a conversation joined



by Deputy Commissioner **Angela Licata**, this was a perfect opportunity to showcase the progress of the NYC Green Infrastructure Plan, the monitoring results from our pilot installations, and our plans for the future in developing Long-Term Control Plans. **Alan Cohn** and **Sri Rangarajan** from BEPA also lent their insight to panels on climate change, water quality modeling, and access issues. DEP was joined at the conference by Deputy Mayor **Cas Holloway**, who addressed the conference on the importance of mitigating climate change in any waterfront redevelopment efforts. I thank the Metropolitan Waterfront Alliance for their attention to the health and vibrancy of New York's waterways, and appreciated the opportunity to discuss DEP's leadership in protecting and improving water quality.

One of the most impactful approaches to stormwater management undertaken in recent years can be seen in DEP's award-winning Staten Island Bluebelt Program, an effort that received a significant boost on Sunday when Mayor Bloomberg announced the New York City Wetlands Strategy.  The city's wetlands are a vital part of our waterfront, as vibrant ecosystems that protect the shoreline and help beautify the waters of the Harbor. The Strategy contains 12 initiatives that will invest \$48 million to restore 127 acres citywide and their surrounding areas. The Strategy will also add 75 acres of wetlands to the New York City Parks system, and create a natural areas conservancy to encourage a public-private partnership for wetlands management. The conservancy will be the first citywide preservation network in the country, coordinating public and private partners to raise funds, locate resources, and manage wetland projects. The Strategy will become yet another example of New York City leading the way as a model for cities worldwide.

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



**Ketul Patel**, Assistant Mechanical Engineer at Reservoir Operations for BWSO, draws on a diverse set of skills ranging from engineering and plumbing to chemistry. As he describes it, “One day I’m doing visual dam inspections, or I’m writing specifications about a new piece of equipment we need, and the next day I will be preparing Piping and Instrumentation Diagrams of our chemical feed systems or working on a new service contract.”

At DEP for nearly a decade, Ketul has seen first-hand that there is “a lot of work being done behind the scenes to deliver safe drinking water to New York City’s residents.” Ketul originally started his career as an operator at Hillview Reservoir, performing chemical treatment in the civil service tile of Watershed Maintainer. Ketul also had a mechani-


cal engineering background and was promoted off the civil service list for Assistant Mechanical Engineers in 2007. With his education and hands-on knowledge of operations, he has proven himself to be a valuable asset within BWSO.


Ketul does not have a typical day, and balances his time between the field and the office. Patel’s site visits include Hillview Reservoir in Yonkers, which stores 900 million gallons of water, and Jerome Park Reservoir in the Bronx which is undergoing renovation. Additionally, his visits and inspections also include the Central Park Reservoir in Manhattan and Silver Lake in Staten Island, although they are not online as part of the drinking water distribution supply.

Ketul handles the storage and retrieval of information related to pipe and drain systems, mechanical hydraulic systems, and chemical feed systems. He updates existing drawings using computer aided software.

In his spare time, Ketul Patel likes to spend time with his family outdoors. He especially enjoys taking **Ayush**, his eight year old son, and **Jiya** his seven year old daughter, to Flushing Meadows Park which is not far from his home.

## Did You Know

...that there is a replica of Central Park  in an office in the Lower East Side? LTL Architects designed a living replica installation of the Park in the offices of OpenPlans that among other things includes its reservoir. Beyond making for a vibrant space, it also plays a key role in the office’s LEED gold certification by providing insulation and helping to cool and clean the air. A visitor who walks into OpenPlans offices, will see the 84-foot long walnut bookshelf resembling Central Park and the surrounding streets of Manhattan. The designers paid such meticulous attention to detail that each shelf represents a real street and different levels of greenery reflect the park’s varying wooded and flat areas. Even specific paths, ponds, and lakes are rendered in the massive green map.

**SALUTING OUR VETERANS:** The Mayor’s Office of Veteran’s Affairs has asked that we recognize our veterans over the Memorial Day weekend. “Goodwill Suits for Vets” will be providing veterans returning to the workforce with professional attire from participating Goodwill stores in New York and New Jersey from 5/25-5/28. Please share this information with any veterans you know that can use this service. For more information .

## (Holy Moses! How Great Lawn Went From H2O to RBI... continued)

also supplemented the water supply during drought and in the summer months when less rain meant less water flowing in the Croton River. Its site on high ground assured that water would continue its downhill flow to the city solely by gravity.

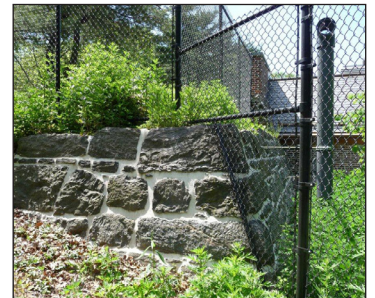
Unlike the grand Distributing Reservoir, designed in the popular Egyptian Revival style, the Receiving Reservoir was simple and practical. Sloped embankment walls formed its rectangular perimeter. Both the outer and inner walls were covered with stone masonry. The walls were planted on top with grass surrounded by a double fence to create a mile long promenade. A large outcropping of bedrock too immense to excavate formed its southwest corner. The height of its walls varied according to the terrain. The highest was 38 feet. Constructed with a southern and northern basin, either basin could be drained for repairs or cleaning without interrupting the water supply. Four gate houses controlled the water flowing out of the reservoir. Like sentries, the gate houses were perched over the reservoir in order to access the greatest depth of water. Anticipating the city’s northward expansion, three of the gate houses controlled water flow to neighborhoods east and west of the reservoir that had not yet been populated. More than a manmade lake, the reservoir was engineered with a flexibility that allowed its operators to respond to future growth, a hallmark of the water supply system that persists today.

When the Croton Aqueduct first flowed into the Receiving Reservoir on June 27, 1842, it was greeted by a 38 gun salute to commemorate its 38 mile journey. Among the spectators were Mayor Robert H. Morris and Governor William H. Seward. Designed to supply a population of 1,750,000 with 20 gallons per day, the aqueduct was expected to be sufficient for many years. However, in less than ten years water consumption far exceeded estimates. Between 1840 and 1850 New York City’s population exploded and consumption, hovering near 80 gallons per capita per day, threatened to outpace supply. Acutely aware that the delivery capacity of the Croton Aqueduct could not keep pace officials committed to building another storage reservoir within the city. In 1862 the City opened a new one billion gallon Receiving Reservoir between 86th and 96th Streets, literally a stone’s throw away. Before construction got started its rectilinear design was reconfigured to imitate a natural lake formation in keeping with the pastoral landscape envisioned by the Frederick Law Olmstead and Calvert Vaux Green-

sward Plan for Central Park. When it came to the old reservoir, Olmstead and Vaux had no choice but to incorporate it into their plan. They did so by camouflaging it behind a grove of trees.

After the completion of the Catskill Aqueduct and City Tunnel No. 1 in 1917 the need for the old Central Park Reservoir, diminished. With plans to convert the site into a World War I memorial, flow into the old reservoir was shut off on May 18, 1925. The reservoir was formally transferred to the Department of Parks on November 6, 1929 and emptied the next year.

Plans for the war memorial never materialized. Progressives championed a park with recreational areas while others promoted a formal promenade between the Art Museum on the east and the Natural History Museum on the west. Eventually a plan for a grand lawn, originally put forth by the American Society of Landscape Architects won out. Slowly but surely, work to fill in the reservoir moved forward, utilizing thousands of cubic yards of material excavated from Rockefeller Center and the 8th Avenue subway. Parks Commissioner Robert Moses opened the Great Lawn in 1936. The baseball diamonds were added in the 1950s, also under Moses.



Physical remains of the old Receiving Reservoir are few and can be found only if one knows where to look. The bedrock that forms the edge of Turtle Pond is the same that formed the southwest corner of the reservoir. Remains of the reservoir’s western wall can be found in a stand of trees north of the Delacorte Theater. The most impressive ruin is located along the 86th Street transverse wall where, tucked up against the east end of the Central Park Police Precinct is the northeast corner of the original Receiving Reservoir pictured above. Its sloped stone embankment wall is unmistakable. It’s worth a visit and if time permits, hike up to Belvedere Castle for a bird’s eye view of the Great Lawn; the perfect spot to imagine the Croton Aqueduct water spilling into the reservoir for the first time, and transforming the city forever.

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