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Department of Environmental Protection Receives Three Prestigious Awards for Construction and Operation of Croton Water Filtration Plant



New York State American Water Works Association awards Croton Water Filtration Plant with Project of the Year and Operator of the Year

American Council of Engineering Companies of New York honors Croton Water Filtration Plant with 2017 New York Diamond Award

Photos of the Croton Filtration Plant project can be found on <u>DEP's Flickr page</u>

New York City Department of Environmental Protection (DEP) Acting Commissioner Vincent Sapienza today announced that the Croton Water Filtration Plant has been recognized as Project of the Year by the New York State American Water Works Association (NYSAWWA) and is the recipient of the American Council of Engineering Companies of New York's (ACEC) 2017 New York Diamond Award. NYSAWWA also honored DEP's Chief Operator of the Croton Water Filtration Plant, Tim Daly, as Operator of the Year.

"DEP is proud that the Croton Water Filtration Plant has been recognized with these high honors by both the NYS American Water Works Association and the American Council of Engineering Companies," **DEP Acting Commissioner Vincent Sapienza** said. "The activation of the Croton Water Filtration Plant in 2015 was an important milestone for New York City's water supply, renewing the

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City's access to a source of water that protects us against droughts and other challenges that our water supply confronts from time to time. The dedicated team of engineers, planners, managers and construction workers who built the plant deserve credit for the construction of this massive public works project. I would like to especially thank our DEP staff who played a crucial role at every stage."

The \$3.2 billion Croton Water Filtration Plant was honored with the associations' top awards earlier this year. ACEC honors outstanding achievements in engineering through its annual *Diamond Award*. NYSAWWA annually honors individuals and organizations that provide exemplary contributions to the water industry throughout New York State. The NYSAWWA's *Project of the Year* award was established to promote excellence in the management and administration of projects within the water industry. Its *Operator of the Year* award recognizes the outstanding performance of one water treatment operator in the state each year.

This year's *Operator of the Year* award recipient, DEP's Chief Operator of the Croton Water Filtration Plant Tim Daly, led the test operation, commissioning and startup phases of the Croton Water Filtration Plant as it transitioned from construction to operation in 2014-2015. He is currently responsible for the day-to-day operation of the Bronx plant, which has the capacity to filter as much as 290 million gallons each day from the New York City's Croton System.

Daly has been a state-certified 1A operator for more than 20 years, working at the Jamaica Water Supply, American Water, and at NYC DEP. Over the past three years, Daly and his dedicated and skilled staff of operators have carefully guided the plant through startup and commissioning, and through ramping up to full production to counterbalance drought conditions in the Catskills by pushing additional Croton water into the City distribution system last year.

New York City has three upstate water supply systems – Croton, Catskill and Delaware. The Catskill and Delaware systems, which supply 90 percent of the City's water on a typical day, operate under a federal waiver that allows them to avoid filtration. Surrounded by large swaths of protected forest, these reservoirs are also protected by a number of conservation and regulatory programs that are funded by DEP.

The Croton System, located primarily in Westchester and Putnam Counties, has provided drinking water to New York City for 175 years. When its first dams were constructed to provide the City with fresh water from an upland source, the Croton System was largely surrounded by farms, forest and a rural landscape. As decades passed, the growth of the metro area resulted in more suburban development around the Croton System as small cities, villages and hamlets sprang up around its rivers and reservoirs. Water quality in the Croton System slowly degraded as development in its watershed continued. As federal regulations for drinking water tightened in the late 1980s and early 1990s, the Croton System could no longer meet the criteria for avoiding filtration. In the 1990s, DEP, federal and state regulators agreed that a filtration plant must be built.

Before construction began, more than 1 million cubic yards of rock and soil were excavated from the site, which now reaches a depth of roughly 100 feet below grade. Construction of the 830-foot-long by 555-foot-wide facility began in 2007 and work included laying nearly 250,000 cubic yards of concrete and 27,000 tons of re-enforced steel, the addition of 160,000 feet of pipe and more than 200 pumps, and the installation of more than 10 million feet of low and high-voltage wire, nearly 2 million pounds of duct work and 20 ultra-violet light disinfection units. In 2010, the final roof slab was laid in place and it was covered with dirt and reseeded. The Mosholu Golf Course driving range is now taking shape on top of the facility.

Water is conveyed from the Croton System reservoirs through the New Croton Aqueduct, which was placed into service in 1890. The brick-lined aqueduct is 33 miles long and measures 13 feet in diameter. It delivers water by gravity from New Croton Reservoir in Westchester County to Jerome Park Reservoir in the Bronx, where it is then pumped into the filtration plant. When DEP stopped using Croton

Water and began planning the construction of the filtration plant, the aqueduct was drained and an extensive inspection of the tunnel took place. Rehabilitation work included re-grouting the brick lining of the tunnel, upgrading 34 shaft connections that allow workers to access the tunnel from ground level, and repairing valves and pumps that allow certain Westchester communities to pull water from the aqueduct. In addition, a 58-foot-long and 12-foot-wide concrete plug was built inside the aqueduct beneath Jerome Park Reservoir to divert water to the Croton Filtration Plant.

To divert the water from the New Croton Aqueduct to the filtration plant, DEP drilled and blasted a 12-foot diameter, 880-foot-long tunnel. To view a video of a blast click here (http://bit.ly/2tCDe5g). In addition, two new water tunnels were excavated by a tunnel boring machine to bring the filtered water back to the existing distribution network. These two tunnels are 9-feet in diameter and together stretch for more than a mile.

Water is filtered and treated by several processes as it runs through the Croton Water Filtration Plant. The water is aerated, sent through a sand medium and exposed to ultraviolet light to protect against potentially harmful micro-organisms. An advanced laboratory tests the water as it enters the facility, before it leaves, and at every step throughout the filtration process to ensure it meets or exceeds all state and federal guidelines.

DEP manages New York City's water supply, providing more than one billion gallons of high quality water each day to more than 9 million New Yorkers. This includes more than 70 upstate communities and institutions in Ulster, Orange, Putnam and Westchester counties who consume an average of 110 million total gallons of drinking water daily from New York City's water supply system. This water comes from the Catskill, Delaware, and Croton watersheds that extend more than 125 miles from the City, and the system comprises 19 reservoirs, three controlled lakes, and numerous tunnels and aqueducts. DEP has nearly 6,000 employees, including almost 1,000 scientists, engineers, surveyors, watershed maintainers and other professionals in the upstate watershed. In addition to its \$70 million payroll and \$157 million in annual taxes paid in upstate counties, DEP has invested more than \$1.7 billion in watershed protection programs—including partnership organizations such as the Catskill Watershed Corporation and the Watershed Agricultural Council—that support sustainable farming practices, environmentally sensitive economic development, and local economic opportunity. In addition, DEP has a robust capital program with nearly \$14 billion in investments planned over the next 10 years that will create up to 3,000 construction-related jobs per year. For more information, visit nyc.gov/dep, like us on Facebook, or follow us on Twitter.



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