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FOR IMMEDIATE RELEASE 18-48

May 14, 2018

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National Infrastructure Week: DEP Celebrates “Holing Through” for First Section of New Release Tunnel at Schoharie Reservoir

More Information

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Micro-tunneling machine breaks through to complete land leg for new release works

Additional photos available [here](#) and video available [here](#)

The New York City Department of Environmental Protection (DEP) reached a landmark recently when a micro-tunneling machine broke through a wall of rock and completed the first leg of a new release tunnel at Schoharie Reservoir. The “holing through” happened April 23 at 9:02 p.m. It marked end of tunneling for the 930-foot land leg of the tunnel. Engineers will now focus on building the 1,188-foot water leg of the tunnel, which will extend from a shaft near Route 990V in Gilboa, NY and come up through the bottom of the reservoir.

The milestone is part of a \$142 million project to build release works at the reservoir. The new tunnel is expected to be complete in about three years. It will give DEP the ability to release water downstream of the reservoir into Schoharie Creek to facilitate dam maintenance, respond to potential emergencies, mitigate flood risk for downstream communities, and enhance downstream habitat for fish and wildlife.

“The projects happening now at Schoharie Reservoir are meant to ensure our critical infrastructure at this location continues to deliver water while protecting public health and safety for decades to come,” **DEP Commissioner Vincent Sapienza** said. “I want to congratulate our crew in Gilboa for completing the first leg of the release tunnel. Holing through on any tunnel is an important landmark that deserves all our recognition and appreciation for the workers who achieved it.”

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The release works are one component of a larger \$400 million program that has strengthened infrastructure and will improve operational flexibility at Schoharie Reservoir, which annually supplies about 15 percent of New York City’s drinking water. The program began with the full-scale rehabilitation of the 155-foot tall Gilboa Dam, a \$138 million project that finished in 2014. It will also include upgrades to the Shandaken Tunnel Intake Chamber and site restoration work. DEP implemented the program of repairs and upgrades at Schoharie Reservoir more than a decade ago to achieve modern safety standards at Gilboa Dam.

DEP began construction of the new release works at Schoharie Reservoir in July 2015. Thus far, the City has made substantial progress on excavations for an intake at the bottom of the reservoir and a release outlet near the creek. Work crews also completed the construction of a 182-foot-deep gate shaft that served as the starting point for tunneling. The 9.5-foot-diameter micro-tunneling machine began its work last October. It is an unmanned machine that is operated by remote control from the surface, where operators track its progress and performance by watching it on monitors inside a control room. Workers only entered the tunnel when the machine needed maintenance.

The machine will drive two tunnel sections that total 2,118 feet, running as deep as 185 feet below the surface. The recently completed land leg of the tunnel stretched 930 feet from the gate shaft to a valve chamber on the eastern bank of Schoharie Creek. The valve chamber is located about 1,000 feet downstream of Gilboa Dam. A second leg of the tunnel—set to begin construction soon—will run 1,188 feet from the gate shaft to the intake structure at the bottom of Schoharie Reservoir, several hundred feet south of the dam. Once workers bore into the bottom of the reservoir, a specialized dive team will remove the micro-tunneling machine from the 135-foot-deep water and install the remaining parts of the intake structure.

The valve chamber—which acts as the portal that releases water into the creek—will include two valves capable of releasing about 65-1,550 million gallons of water each day. A third, smaller valve will be capable of smaller releases up to 65 million gallons per day.

Gilboa Dam was built from 1919 to 1927 and impounds Schoharie Reservoir, the northernmost reservoir in the City’s water supply system. Schoharie Reservoir can store up to 19.6 billion gallons of water, and it accounts for nearly 15 percent of the drinking water delivered to New York City each day. Schoharie Reservoir collects water from a 314-square-mile watershed. It diverts that water through the 18-mile Shandaken Tunnel, which discharges into the Esopus Creek where it travels another 11 miles before entering Ashokan Reservoir. From Ashokan Reservoir, the water flows south through the 92-mile-long Catskill Aqueduct to New York City.

DEP manages New York City’s water supply, providing more than 1 billion gallons of high-quality water each day to more than 9.6 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 watershed. In addition to its \$70 million payroll and \$166 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 \$19.1 billion in investments planned over the next decade 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](#).