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DEP to Work With U.S. Geological Survey to Study Suspected Leak from the Catskill Aqueduct



Multi-year study will focus on pressure tunnel that carries water deep below the Rondout Valley
Historic photos of the Rondout Reservoir Pressure Tunnel are on [DEP's Flickr page](#)

The New York City Department of Environmental Protection (DEP) today announced that it will work with the U.S. Geological Survey (USGS) on a multi-year study to examine suspected leaks from a portion of the Catskill Aqueduct that runs several hundred feet below the Rondout Creek in Ulster County. DEP has been gathering information on this portion of the aqueduct, known as the Rondout Pressure Tunnel, for several years. In 2016, experts used a remote-operate vehicle to view the inside of the pressure tunnel for the first time since it was built more than a century ago. The vehicle used high-definition video cameras, acoustic equipment and other instruments to pinpoint several leaks in the tunnel.

Scientific data collected by USGS will supplement the remote-operated vehicle's inspection of the tunnel, giving DEP a clearer picture of where water is traveling after it escapes the aqueduct. At this time, DEP knows that a significant portion of the water comes to the surface and moves overland into the Rondout Creek in High Falls. USGS will begin its work by meeting individually with landowners in High Falls over the next several months. Scientists from USGS will seek permission to install monitoring instruments in existing groundwater wells, and

More Information

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potentially to install new monitoring wells in that portion of the valley. These instruments will help scientists understand if, and by how much, groundwater levels are affected by the Catskill Aqueduct. USGS will collect those data as DEP shuts down and reactivates the aqueduct during planned maintenance over the next few years. [DEP is currently working on a separate project to upgrade valves, fix leaks and clean the inside of the Catskill Aqueduct.](#) That work requires a series of 10-week shutdowns annually in 2018, 2019 and 2020, during which USGS will carefully monitor any water-level fluctuations in wells around High Falls. USGS will begin talking with about 20 landowners north of the Route 213 bridge in the coming weeks and months.

The remote-operated vehicle inspection and USGS well-monitoring program both aim to gather data that will help DEP design an effective repair for the Rondout Pressure Tunnel. DEP expects to begin designing that repair in the early 2020s. Construction is anticipated to happen sometime after the ongoing work for the Delaware Aqueduct Bypass Tunnel under the Hudson River, which is scheduled to be finished in 2023.

Additional information about the leaks, inspections and history of the Rondout Pressure Tunnel are on the [DEP website](#).

What is the Rondout Pressure Tunnel?

The Rondout Pressure Tunnel is a 14.5-foot diameter pipe that stretches 23,608 feet from a wooded area north of Stone Ridge to a site within the Mohonk Preserve. Water within the Catskill Aqueduct travels at ground level before it enters the pressure tunnel, which plunges approximately 500 feet below the surface to convey that water under the Rondout Valley. It then rises back to surface level on the eastern side of the valley, where the water continues its journey toward New York City.

The Rondout Pressure Tunnel is the longest of seven pressure tunnels that allow the Catskill Aqueduct to carry drinking water beneath broad valleys that include creeks or rivers. Other pressure tunnels of the Catskill Aqueduct carry water below the Wallkill River, Moodna Creek, Hudson River, and New Croton Reservoir. The data DEP is collecting on the Rondout Pressure Tunnel is part of a broader effort to inspect and, if necessary, rehabilitate these pressure tunnels for the first time since they were built from 1907-1915.

Pressure tunnels comprise about 15 percent of the total length of the 92-mile Catskill Aqueduct. About 55 miles of the aqueduct were built through “cut-and-cover” methods, where a trench was excavated and the aqueduct was built at the surface. About 14 miles of the aqueduct are grade tunnels that were cut through hills or mountains. Through the cut-and-cover and grade tunnel sections, water inside the Catskill Aqueduct is not under pressure; rather, water inside the aqueduct flows like an enclosed river. The remaining 23 miles of aqueduct is comprised of pressure tunnels and steel pipe siphons that plunge downward into the earth and then return to surface level. In these sections, the aqueduct is under great pressure from water pushing down on itself and outward on the aqueduct walls.

The Catskill Aqueduct

The Catskill Aqueduct is a 92-mile conduit that carries drinking water from Ashokan Reservoir in Ulster County to Hillview Reservoir in Yonkers, on the northern edge of the Bronx. The aqueduct conveys about 40 percent of New York City’s drinking water on an average day, and it can deliver a maximum of 590 million gallons per day.

The Catskill Aqueduct first delivered water to New York City on Dec. 27, 1915, starting with water for the Bronx only. It began to deliver water to all five boroughs of New York City in 1917. The water that came from the Catskills, through the aqueduct, was key to allowing New York City to grow through the industrial and population booms that followed World War I. The Catskill Aqueduct is also the primary water source for several upstate communities, including High Falls, New Paltz, New Windsor, Cold Spring and Cortlandt, to name a few.

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 \$168.9 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 \$19.4 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](#) at, or follow us on [Twitter](#).

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