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Schoharie Reservoir - New York City Water Supply System


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DEP Announces Pilot Program To Better Measure Snowpack, Mitigate Flooding

Snow Pillow Provides Real-Time Data on Amount of Water in Watershed Snowpack

The New York City Department of Environmental Protection (NYCDEP), in cooperation with the Delaware River Basin Commission (DRBC) and the National Oceanic and Atmospheric Administration (NOAA), announced today that it is piloting a new "snow pillow" in the Neversink watershed. The snow pillow is a device that electronically measures the amount of water in the snowpack for an area. DEP is the first agency in the country to use this state-of-the-art technology that was developed by Dr. Jerry Johnson at the U.S. Army Corps of Engineers in Alaska. It has been in testing there and in the western U.S., in conjunction with the Natural Resources Conservation Service (NRCS) Snotel program, and the results have been excellent. The device at Neversink was specifically manufactured for use by NYCDEP.

The new snow pillow design incorporates a 9' x 9' aluminum platform with highly accurate scales that take measurements every 60 seconds, sending the information back to a DEP facility every hour via radio. While DEP staff will continue to do field checks throughout the watershed to verify the data, the snow pillow is a significant upgrade over field checks because it provides continuous, real-time data on snowpack water content, as opposed to getting data only every two weeks under the traditional field measurement program. Preliminary results are encouraging.

"This cutting edge technology will offer DEP the opportunity to verify the real-time data 24 hours a day and have an accurate measurement of the snowpack water in the Neversink watershed," said Paul Rush, NYCDEP Deputy Commissioner of Bureau of Water Supply. "NYCDEP will continue working to find ways to optimize even further the finest water supply system in the country."

Under the recently approved Flexible Flow Management Program (FFMP), DEP includes half of the snowpack in the total storage for its Delaware reservoirs. Accounting for this snowpack water allows DEP to help mitigate flooding for residents immediately downstream of the reservoirs.

MORE INFORMATION

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Weather permitting, Pepacton Reservoir is scheduled to have a snow pillow in the next two months as part of this pilot program.

The acquisition of this unique technology was made possible by a grant of \$22,000 given by the National Oceanic Atmospheric Administration. NOAA is the parent agency of the National Weather Service and thus commonly funds weather-related projects. The Delaware River Basin Commission worked closely with DEP staff to secure the grant on DEP's behalf and handled all administrative work associated with it.

As the effects of climate change become more pronounced, this technology is a real-time tool to collect data of the amount of water in watershed snowpack. If this device offers the expected results, NYCDEP will extend the snow pillow program to other reservoir basins in the Catskill region in the near future. This is the second generation of snow pillows installed by DEP. During the winter of 2005-2006 DEP tested snow pillows using a different technology at several watershed locations.

"Using this new tool to monitor changes in snowpack water content in the watersheds above the New York City-Delaware River Basin reservoirs will support water supply management activities, including ongoing efforts to mitigate the impacts of downstream flooding," Delaware River Basin Commission (DRBC) Executive Director Carol R. Collier said. "The DRBC is pleased to have secured federal funding for the two snow pillows through a National Oceanic and Atmospheric Administration flood warning grant and to have had the opportunity to partner with NYCDEP on this project."

The watershed of the City's 19 reservoirs and three controlled lakes includes parts of eight counties on both sides of the Hudson River – Delaware, Greene, Schoharie, Sullivan and Ulster in the Catskill Region, and Dutchess, Putnam and Westchester Counties east of the Hudson. DEP is responsible for operating and protecting the City's water supply system, one of the largest in the world, which serves nearly eight million residents of the City and one million people in Westchester, Putnam, Orange and Ulster Counties, as well as the millions of tourists and commuters who visit the City every year.