Water Sources and Treatment

Our customers receive water that originates from Otisco Lake, Lake Ontario, and/or Skaneateles Lake depending on their geographic location and changes in seasonal demand. In 2023, we supplied on average 36.33 million gallons per day to approximately 97,600 residential accounts located in suburban Onondaga County, and parts of Madison, Oneida, Oswego, and Cayuga counties. We also supply water daily to 48 industrial customers and four municipal wholesale water accounts. In addition, we supply water on an intermittent or emergency basis to seven additional municipal water systems.

In 2023, on average 17.5 million gallons per day, or 48.2% of OCWA's water supply, came from Otisco Lake, the easternmost and smallest Finger Lake. The customers receiving water originating from Otisco Lake are mostly located in the southern and western half of Onondaga County.

Our Otisco WTP has two intake pipes located in Otisco Lake. The water entering these pipes is immediately disinfected with either sodium hypochlorite or chlorine dioxide to discourage the growth of zebra mussels. The water then travels, by gravity, approximately five miles to our Otisco WTP located in Marcellus, NY. Water first enters the rapid mix tank where a coagulant (polyaluminum chloride) is added. After 30 seconds of mixing, the water enters the contact basins where the calm conditions allow the coagulant to make the small particles adhere together, forming larger particles. Some of these particles settle and are cleaned out later. The contact time in these basins also allows the powdered activated carbon (used only when needed) to adsorb organic taste and odor. After about one hour of contact time, the water next enters the filters. Particles are removed as the water passes through one of six multimedia filters. These filters consist of granular activated carbon, silica-sand, and hi-density sand. The filters are washed when needed and the water used to do this is collected in lagoons and allowed to settle. It is then recycled back to the start of the treatment plant to be treated again. After filtration, the water is again disinfected with sodium hypochlorite and fluoride is added. The water is stored in large tanks located at the treatment plant to provide adequate contact time for the chlorine to work. Once the water leaves the tanks, orthophosphate is added for corrosion control, or to prevent the leaching of lead and copper from pipes into your water.

We also treat and deliver water from Lake Ontario via the Ontario WTP. In 2023, on average 17.7 million gallons per day, or 48.7% of our water supply, came from Lake Ontario. Customers receiving water originating from Lake Ontario are mostly located in the northern and eastern half of Onondaga County. Customers in Madison, Oneida, Oswego, and Cayuga counties receive all their water from Lake Ontario.

Our Ontario WTP pumps water from Lake Ontario through a seven-foot diameter intake it shares with the City of Oswego. Upon entering the raw water pumping station, lake water is treated with carbon dioxide to suppress pH thereby increasing the effectiveness of chemical coagulation. Potassium permanganate is applied seasonally to the water for taste and odor control and for pre-oxidation. The water is then pumped approximately two miles to our Ontario WTP. Water entering the plant is treated with sodium hypochlorite (disinfectant) and polyaluminum chloride (coagulant) and then flash mixed. The water next enters three contact basins where slow mixing allows small particles to accumulate and form larger, more readily filtered particles. After about two hours of contact time, the water flows into dual media filters consisting of granular activated carbon and filter sand whereby particulate contaminants are removed. After filtration, three treatments are applied: fluoride to reduce tooth decay, sodium hypochlorite to disinfect, and sodium hydroxide for corrosion control.

The City of Syracuse Water Department is responsible for treating and delivering water originating from Skaneateles Lake. In 2023, on average 1.12 million gallons per day, or 3.1% of our water supply, came from Skaneateles Lake. The water was purchased from the City of Syracuse Water Department through various supply connections. We use this water to supplement areas close to the city boundary when needed. Our customers living in Nedrow, Southwood, and the Jamesville area get their water from Skaneateles Lake exclusively.

The City of Syracuse does not filter the water from its intakes located in Skaneateles Lake because it has been granted a waiver to provide its customers with unfiltered water, subject to strict conditions set by the NYSDOH. These conditions include water quality monitoring, backup disinfection, and watershed protection. The City of Syracuse water plant, located in the Village of Skaneateles, is where the water is disinfected with chlorine and fluoride is added. Water then flows by gravity into the City's storage reservoirs. Orthophosphate is added to the water (for corrosion control) as it leaves the reservoirs, and it is disinfected again by the addition of sodium hypochlorite. In 2013, an Ultraviolet Light Treatment Facility was put into operation at the City's Westcott Reservoir. Another UV Light Treatment Facility at the City's Woodland Reservoir was added in April 2014. Ultraviolet disinfection allows the City to strengthen protection against microbial contaminants, especially targeting cryptosporidium.

The first step in water treatment is to protect the source. At OCWA, we have ongoing watershed protection programs in place. These programs are carried out in cooperation with the State and Onondaga County Departments of Health. In addition, we monitor lake conditions at regular intervals prior to treatment. The City of Syracuse also has ongoing watershed protection programs, and it monitors lake conditions at regular intervals prior to treatment.

The NYSDOH completes Source Water Assessments to better recognize potential sources of contaminants for every water source used throughout the State. This assessment, as it relates to OCWA, can be found in this report under the heading **SWAP Summary for OCWA** on Page 7.

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source waters are microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. To ensure that water is safe to drink, NYSDOH and USEPA prescribe regulations which limit the level of certain contaminants in water provided by public water systems. The State Health Departments and the US Food and Drug Administration's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.