

SOURCE WATER MANAGEMENT IN THE WANAQUE RESERVOIR SYSTEM

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The Wanaque Reservoir System provides potable water supply to millions of residents in the most densely populated urban and suburban areas in northern New Jersey. The North Jersey District Water Supply Commission (NJDWSC) is the custodian of the Wanaque Reservoir System.

In the dawn of the 21st century, the State of New Jersey launched “Smart Growth” initiatives and created the Highlands Council to preserve the water quality and quantity of the region so well known for its water resources. As a result, significant population increases are anticipated outside the Highlands and within the NJDWSC’s consumer areas. To support this growth in the urban areas NJDWSC supplies, it has embarked upon a number of proactive and innovative measures to control and enhance its source water supply. These programs optimize the management of the Wanaque Reservoir System’s source water to aid the Commission in satisfying the projected increase in demand.

To satisfy the region’s water demand, significant off-stream diversions to the Wanaque Reservoir are necessary during prolonged dry climatic periods. An unavoidable consequence of such river water diversions is the high nutrient loads introduced into the Wanaque Reservoir. While the obvious benefit of additional water supply is of foremost importance, the nutrient loading in the water creates unnatural water quality conditions. Extra nutrient loading, such as the increased phosphorus, creates conditions conducive to algae blooms and other types of nuisance aquatic plant growth that would not occur naturally and which effect water quality, treatment costs, and create public health concern with regard to disinfectant byproducts.

A comprehensive reservoir water quality management action plan has been developed and implemented by NJDWSC to address the current and future needs for managing the Wanaque Reservoir. This platform presentation will discuss the details of the many programs employed as components of this management plan.