

# WATER REUSE



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**W**hat can water reuse do for you? The concept behind water reuse is treating wastewater to near potable water quality for non-potable uses in a single step, thereby eliminating the need for both wastewater and potable water treatment facilities. Through the use of advanced treatment technologies, including but not limited to microfiltration, water reuse is becoming more accessible and more common.

Water reuse has several long-term positive impacts on both potable water and wastewater systems. For potable water, a reduction in water allocation needs can exist, which is increasingly common today as drought conditions and over-pumping of existing groundwater supply sources encumber many states. As a relief to water treatment plants, the flow that was originally being treated to potable water quality for non-potable water quality uses is removed. The result is a reduction of electrical and chemical demands related to the lower flow through the treatment process. With respect to wastewater treatment systems, source water for reuse systems can range from raw sewage to treated effluent. This results in a positive impact – reducing flow burdens on interceptors, pumping stations, treatment plants, and/or discharge points.

Remington & Vernick Engineers has been involved with water reuse projects from the initial conceptual planning and site identification phase through grant acquisition to engineering design and permitting. We anticipate construction and start-up in the Spring of 2009. Highlighted in this article are three of our current water reuse projects.

**Gloucester County Utilities Authority (supplier).** This is a water reuse project with a power company located adjacent to the Authority's wastewater treatment plant. No additional treatment is required of the plant and the power company intends to have a year-round need for up to 11.5 MGD of treated effluent pumped directly from the plant's discharge pipe to a holding tank. The bulk of the reuse water will be for non-contact cooling water in the cooling tower. Reuse water will also be used for the boiler and for service water in the power plant.

**Township of Maple Shade (supplier) and the Township of Pennsauken (user).** This project involves a multi-municipal agreement between these municipalities. The municipally owned golf course currently uses public potable water for irrigation. Through our efforts in working with the New Jersey Department of Environmental Protection and applying for grant money, this project received a 2/3 grant for design and construction. The firm is responsible for the design, permitting, construction and start-up of treatment at the wastewater plant to polish treated effluent to meet "public access" water quality limits established by the NJDEP for reuse water. As added value, we identified additional recreational sites for irrigation with beneficial water reuse nearby the wastewater treatment plant.

**Pitman Golf Course (user).** This is another golf course benefiting from irrigation with water reuse. This water reuse project is different from the Maple Shade project in that it involves mining of raw sewage from an existing interceptor. The flow mined from the interceptor will create additional capacity in downstream pumping and treatment processes and may provide conveyance capacity for future economic development in the area. In addition to the seasonal demand at the golf course, Rowan University has been identified as an interested, year-round local user in the vicinity of the water reuse project. The concept of providing reuse water for flushing water and other uses dovetails appropriately into the University's Environmental Campaign.

Working together with our clients, their neighbors, and the general public has resulted in Remington & Vernick Engineers and Affiliates becoming a leader in successful water reuse projects.

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