



HOBBS, UPCHURCH & ASSOCIATES, P.A.

Consulting Engineers, Land Surveyors, and Planners
800-849-1861 info@hobbsupchurch.com

Boone Wastewater Treatment Plant

In 1992, Hobbs, Upchurch & Associates, P.A. began to review and plan a wastewater treatment facility expansion for the Town of Boone. This project is particularly interesting because the WWTP effluent flows into a tributary of the New River. The New River was designated as outstanding resource waters, which required the Town of Boone to modify their effluent treatment capacity by improving the tertiary limits.

1996, with the help of Hobbs, Upchurch & Associates, The Town of Boone found the funds to upgrade its wastewater treatment plant.

Effluent Limits

The Town of Boone faced several hurdles in its efforts to improve treatment, such as its discharge to a tributary of the New River, which called for extremely tight effluent limitations. The relatively cold climate in the Town also did not lend itself to trickling filter technology. To provide the necessary 4.82 million gallon per day capacity, engineers devised two primary arrangements: the extended aeration process as well as a trickling filter followed by suspended growth process. Based on the results of a net present cost analysis, as well as applicability of technology and treatment, the Town selected an extended aeration activated sludge facility.

Design

The design of the Boone Wastewater Treatment Facility posed several operational considerations and challenges, such as the climate of Boone and the mountainous, geographical location in which new plant structures were constructed. Construction phasing was certainly a major consideration, because the new secondary and tertiary units had to be installed concurrently with the demolition of the existing trickling filters.

Construction of the project finished well ahead of schedule despite having to demolish most of the old plant while constructing new treatment units and maintaining compliance with SOC limits for the effluent. The project coordination between the Town, Contractors and HUA during construction benefited the schedule of work items and facilitated improvements to the project, through Value Engineering by all parties throughout the construction phase.

This project received a 1999 Engineering Excellence “Grand Award” from the American Council of Engineering Companies of North Carolina (ACEC/NC). The project was also featured in several trade publications and newspapers.