



Siler City Wastewater Treatment Plant
Siler City, North Carolina

In 1988 Hobbs, Upchurch & Associates began planning and design of an upgrade of the 1.8 MGD wastewater treatment plant at Siler City. The plant was experiencing severe problems caused by large peak stormwater inflow, a large constituent of industrial water including discharge from poultry processing plants and the relatively low flow (approaching zero at times) of the small receiving stream.

The Town chose to seek funding through the State Revolving Loan Program administered by the Construction Grants and Loan Section of DEM. The option required an update of the 201 Facilities Plan, which proved to be an extremely difficult and time consuming task because of environmental groups trying to protect the Rocky River which received the plant discharge via Love's Creek.

A federally endangered species, the Cape Fear Shiner, raised particular concern, because of its habitat several miles downstream of the plant discharge. Environmental planning included time of travel stream studies, stream macro-invertebrate populations, fish and mollusk population investigations, and consideration of the waters' nutrient sensitivity.

Because of low receiving stream flows and the emphasis on improving the condition of the Rocky River, Siler City was given the strictest discharge limits presently in effect in North Carolina.

The design of the plant posed several problems, including the need for the addition of a large volume of stormwater flow equalization; the need for a large volume of aerobic sludge digestion; sludge thickening and sludge holding; and the need to incorporate the oddly configured plant into the final design while maintaining compliance during the construction period.

Extensive research was performed on nutrient removal technologies, both proprietary and non-proprietary. Each alternative was analyzed financially to balance the cost of capital expenditures against the operation and maintenance costs and the expected reliability of the processes. By careful analysis of the plant influent, HUA was able to provide a non-proprietary process at considerable cost savings which, when augmented by chemical nutrient removal, provides a reliable and controllable method of nutrient removal.

All existing plant basins, including clarifiers, were used in the design for conversion into flow equalization and sludge handling facilities.

This project received a 1994 Engineering Excellence “Grand Conceptor Award” from the American Council of Engineering Companies of North Carolina (ACEC/NC). Project that receive this award undergo a through third part review and are rated on requirements such as exceeding client’s expectation.