

Strodes Creek Wastewater Treatment Plant

project description | wastewater treatment

location

Winchester, Kentucky

client contact

Winchester Municipal Utilities (WMU)
Vernon Azevedo
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period of services

2004 - present

construction cost

\$21,200,000



The wastewater system improvements project provides for the long-term wastewater treatment needs for the Winchester Municipal Utilities (WMU) planning area as defined by the 1996 Wastewater Facilities Plan. This required decommissioning of the existing wastewater treatment plant (WWTP) located on the same site approximately three miles north of Winchester on Van Meter Road, an upgrade of the influent gravity sewer into the new plant, and construction of a new 6.0 million gallon per day (MGD) WWTP. The project was funded through the Kentucky Infrastructure Authority (KIA).

The new Strodes Creek WWTP includes a 24.0 MGD influent pump station/screenings facility designed to provide complete pumping redundancy and influent flow measurement. Preliminary treatment includes two mechanical fine screens with an integral screw conveyors and a manual bypass coarse bar screen. All screening will take place before the wastewater is pumped. Following preliminary treatment, the wastewater enters a series of basins to begin the biological treatment process. Anaerobic basins are designed to promote the growth of phosphorus-storing microorganisms, providing biological phosphorus removal as required by the Kentucky Division of Water. Four large oxidation ditches provide dissolved oxygen treatment to allow for the removal of 640 mg/L of BOD following the phosphorus removal system. Following the biological processes, four 105-foot diameter final clarifiers remove suspended solids. The clarified effluent is disinfected using ultraviolet light and oxygenated via a re-aeration ladder. Effluent from the facility is measured using a transit-time flow meter prior to being discharged into Strodes Creek. Waste solids are injected with polymer, dewatered using two new gravity belt thickeners placed above the two existing belt filter presses, and hauled to an approved landfill.



project components

- Decommissioned existing WWTP
- Second Municipal Biological Phosphorus Removal Facility Approved in Kentucky
- Backup Chemical Phosphorus Removal Facilities