

## **FMA Case Study:**

# **Lafollette Wastewater Treatment Plant**

### **{Situation}**

In October 2004 the City of LaFollette and the LaFollette Utilities Board received a Tennessee Department of Environment and Conservation (TDEC) Director's Order to do two things:

- 1) eliminate the bypassing of untreated wastewater at the city's treatment plant; and
- 2) meet stringent discharge limits for removal of Total Phosphorus and Total Nitrogen.

### **{Solution}**

The project was a tall order, to say the least, but every good ninjaneer loves a challenge.

FMA prepared a Corrective Action Plan/Engineering Report (CAP/ER) that outlined a strategy for managing the peak flow that entered the treatment plant and to satisfy the stringent discharge limits. The \$6.7 million plant upgrade included a new 1.875 mgd (million gallons per day) Biological Nutrient Removal (BNR) treatment process, and this BNR process in turn required numerous other upgrades, including fine screening by rotary screens, grit removal, an anaerobic reactor for reduction of Total Phosphorus, dual oxidation ditch reactors for reduction of Total Nitrogen, secondary clarification, tertiary filtration with rotating disc filters, and ultraviolet disinfection.

### **{Success}**

Since the upgrade went into operation in March 2010, the treatment plant has consistently met its permit limits with Total Phosphorus of less than 1 mg/l (limit is 3 mg/l) and Total Nitrogen of less than 3mg/l (limit is 7 mg/l). The turbidity of the final effluent is consistently less than 1.0 NTU.

In layman's terms, the final outcome was a "home run."

"FMA completed the design, permitting, and construction phases of LUB's Wastewater Treatment Plant. FMA staff applied their knowledge of advanced wastewater treatment process to develop a state of the art design. They leveraged their experience with other municipalities, along with their industry knowledge, to propose cost-effective alternatives. The quality of the project was exemplified by the minimal amount of change orders that occurred during construction. This is a direct reflection of the thoroughness of the design documents"

~ Kenny Baird, General Manager